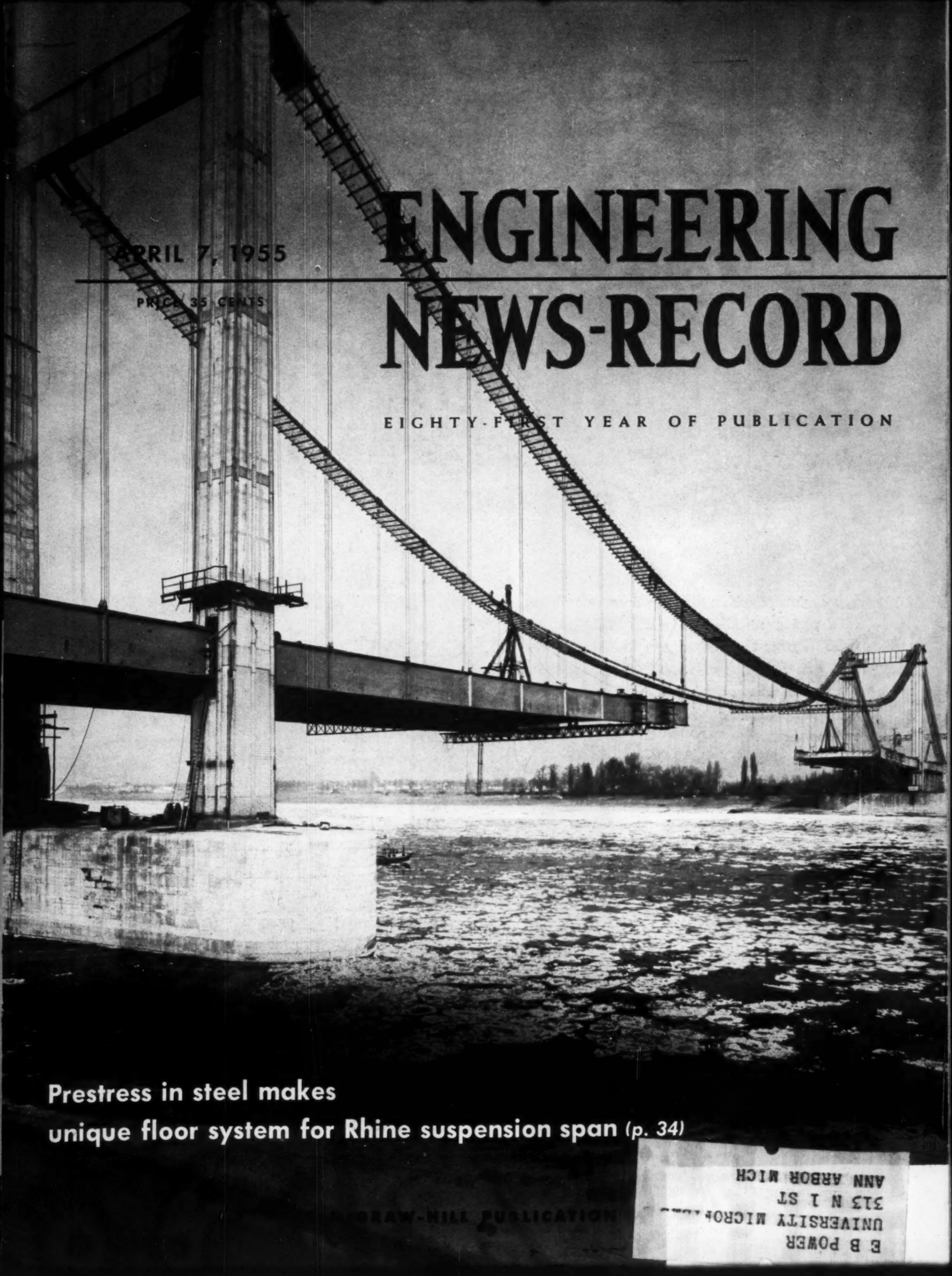

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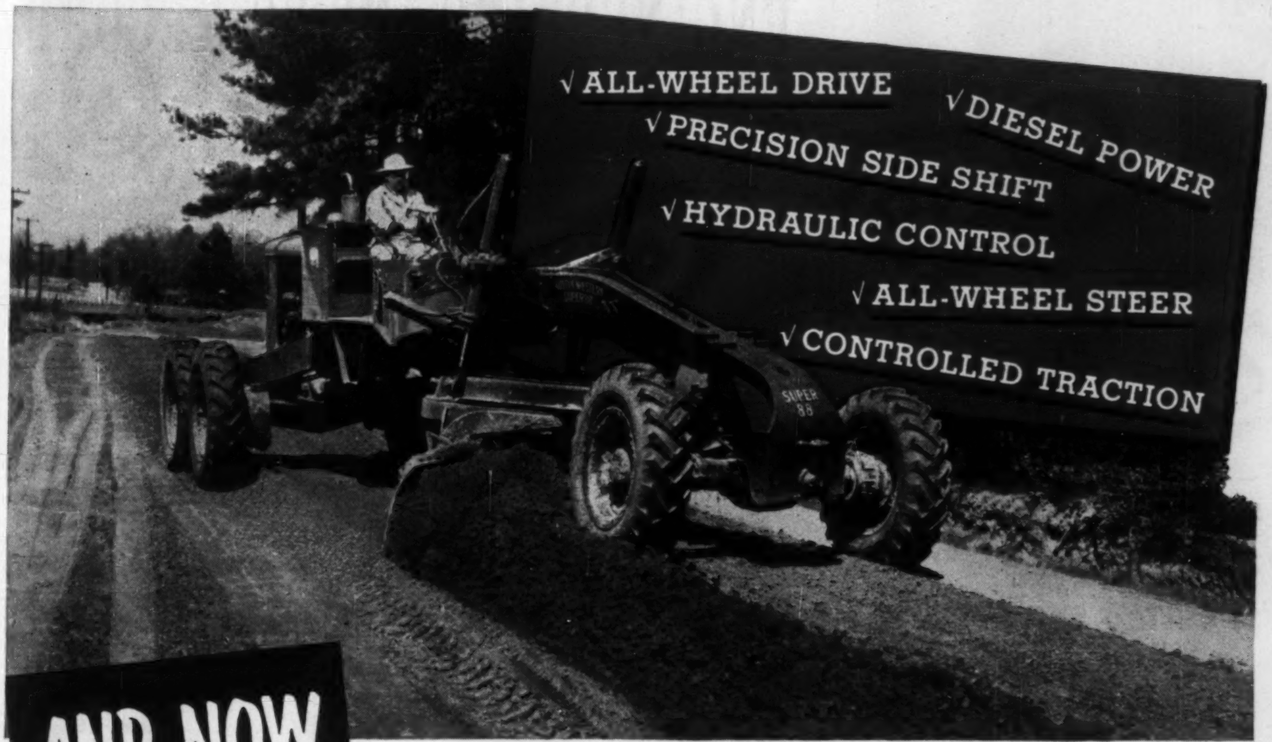
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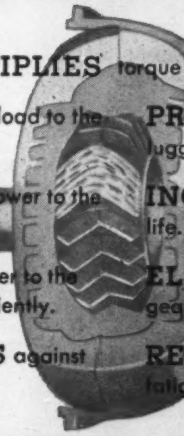

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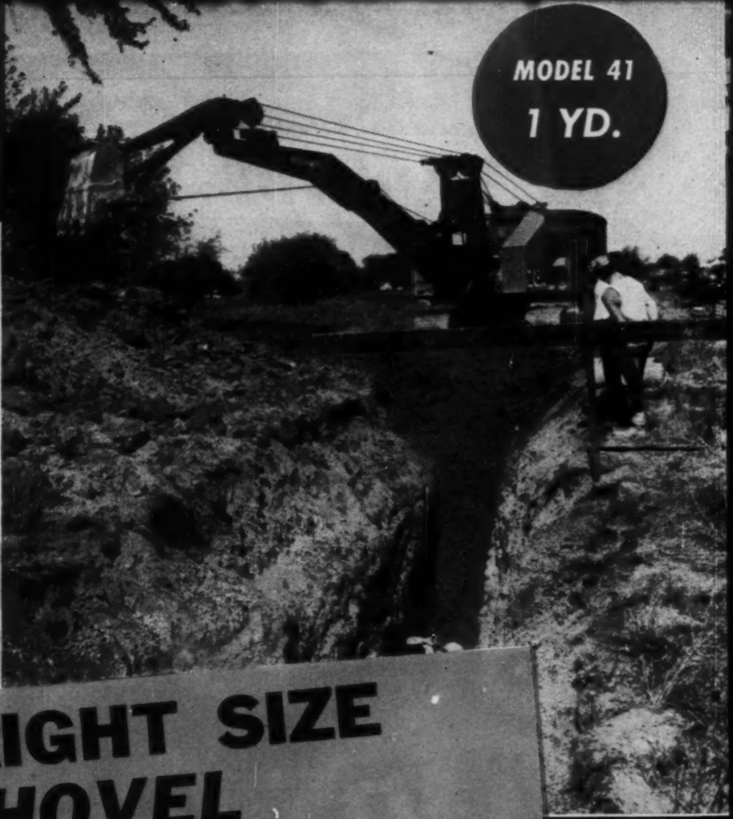
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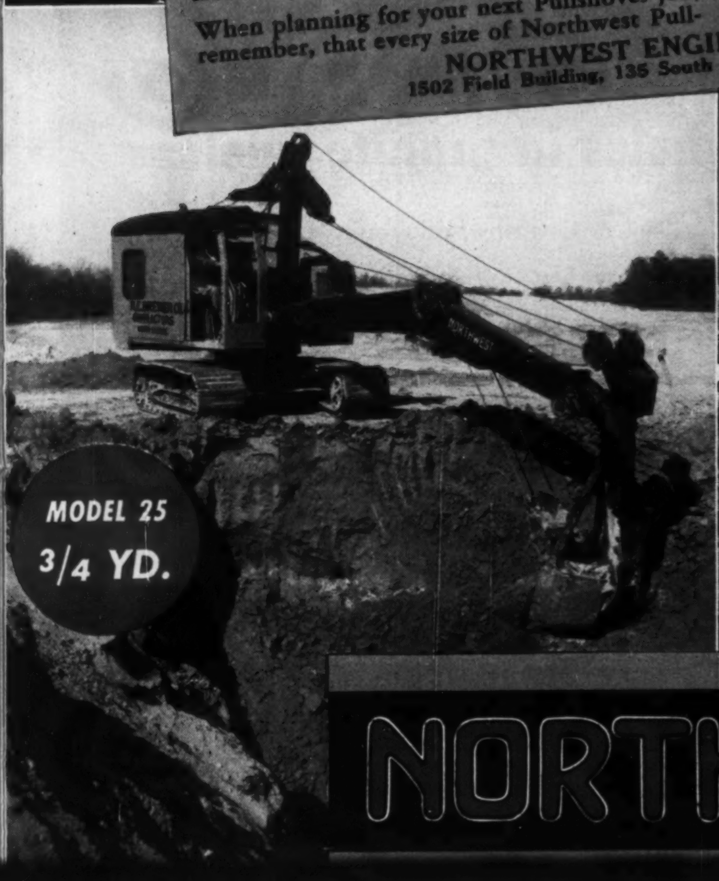
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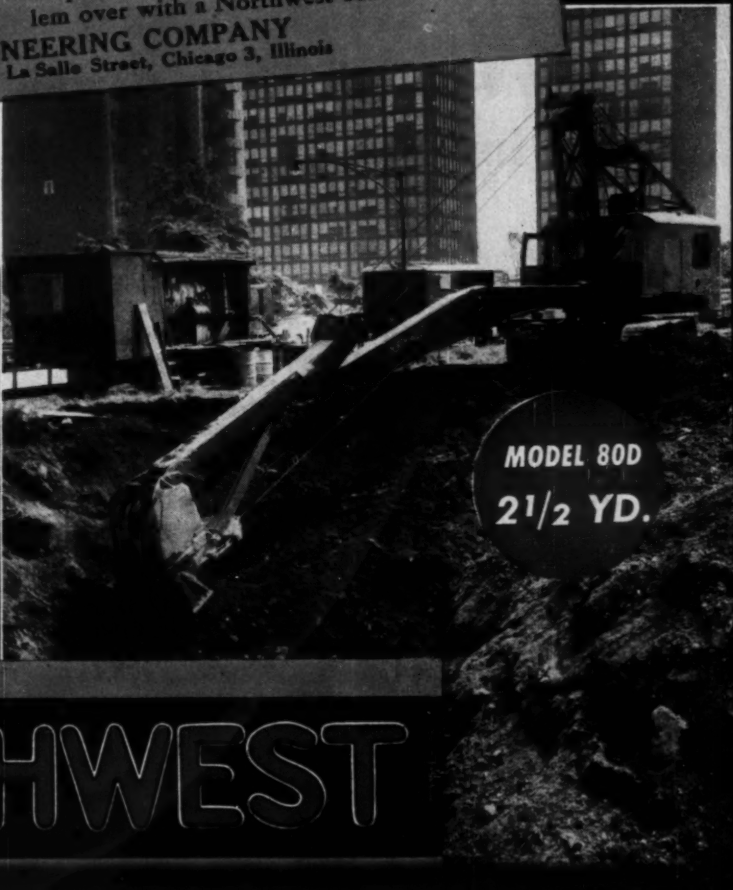
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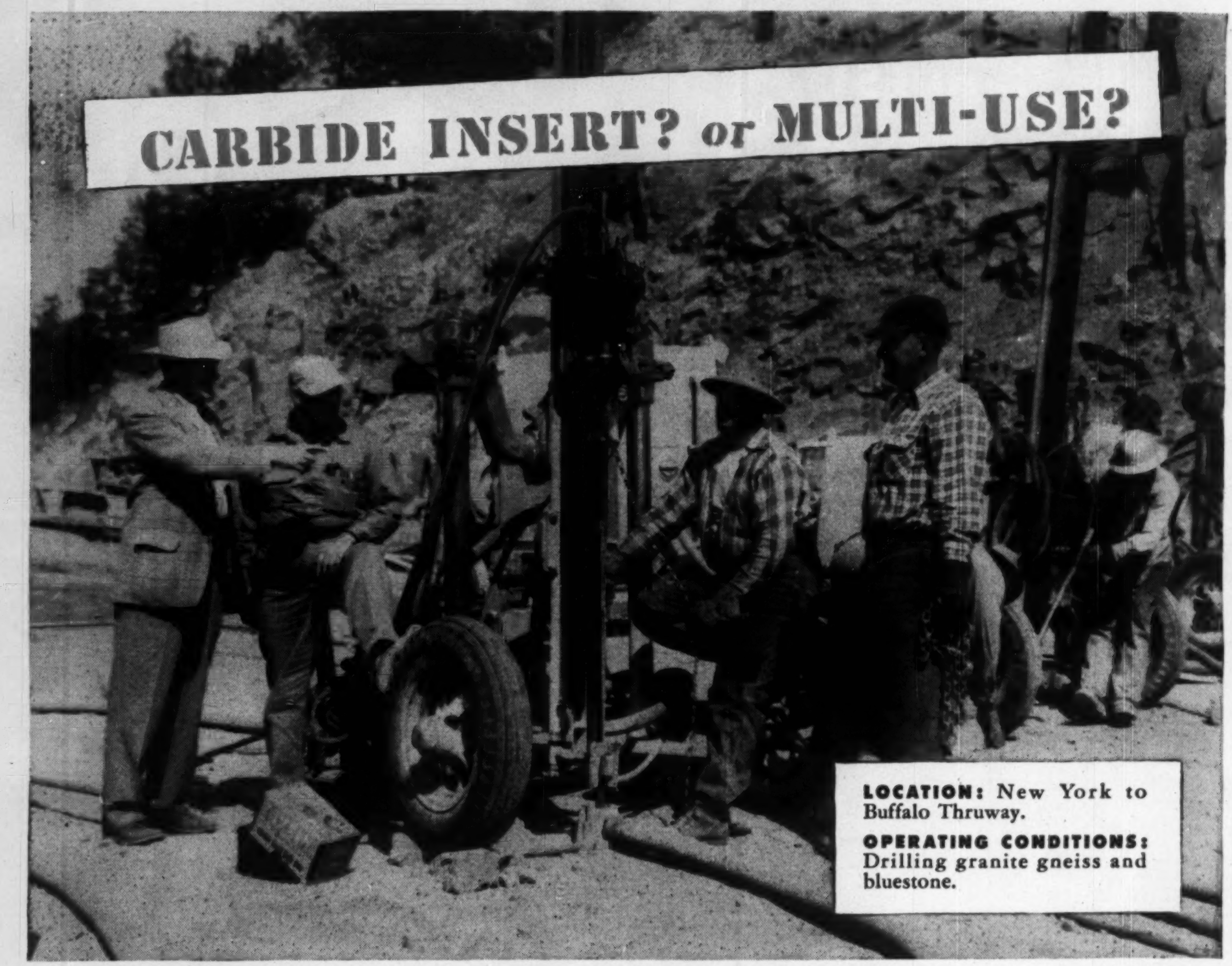
CARBIDE INSERT? or MULTI-USE?



LOCATION: New York to Buffalo Thruway.

OPERATING CONDITIONS: Drilling granite gneiss and bluestone.

L. G. Defelice & Son, Inc. cuts costs on New York superhighway by using TIMKEN® carbide insert bits to drill 32′ holes in granite gneiss

IN drilling operations on the New York to Buffalo Superhighway, L. G. Defelice & Son, Inc. of North Haven, Conn., cut costs by using Timken® carbide insert bits. Drilling extremely deep holes in granite gneiss and bluestone, they get increased drilling speed, need fewer bit changes.

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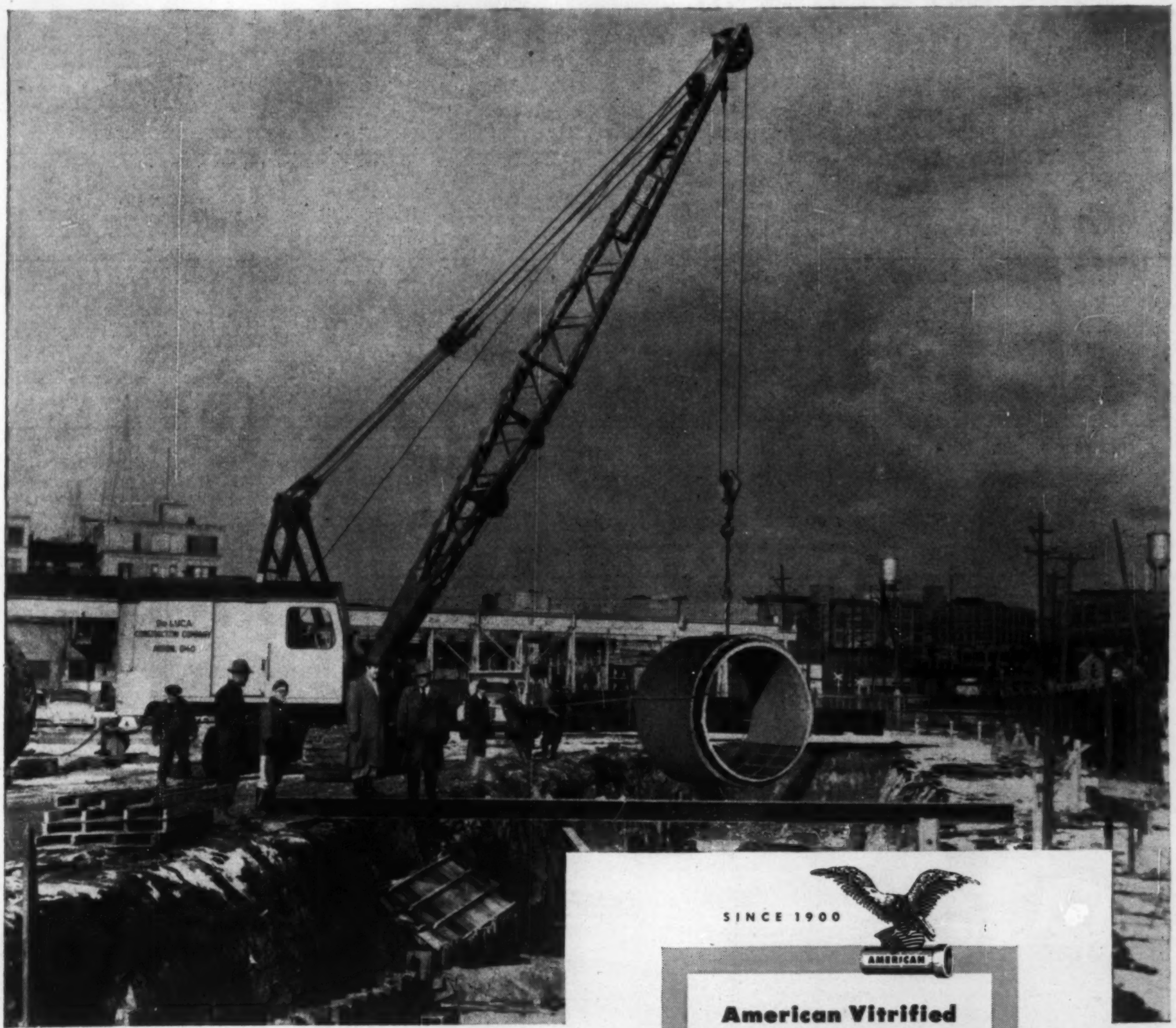

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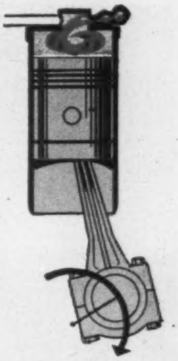

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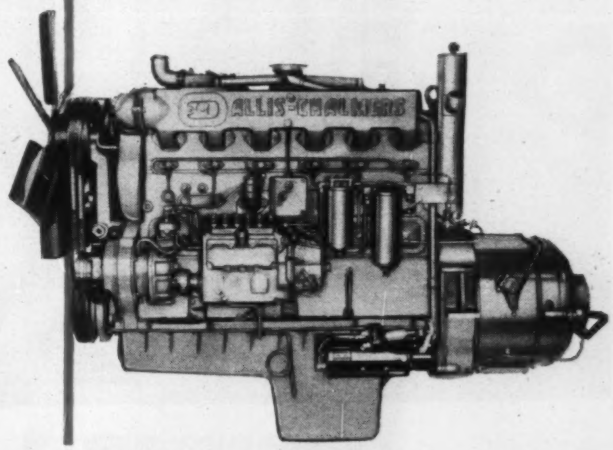

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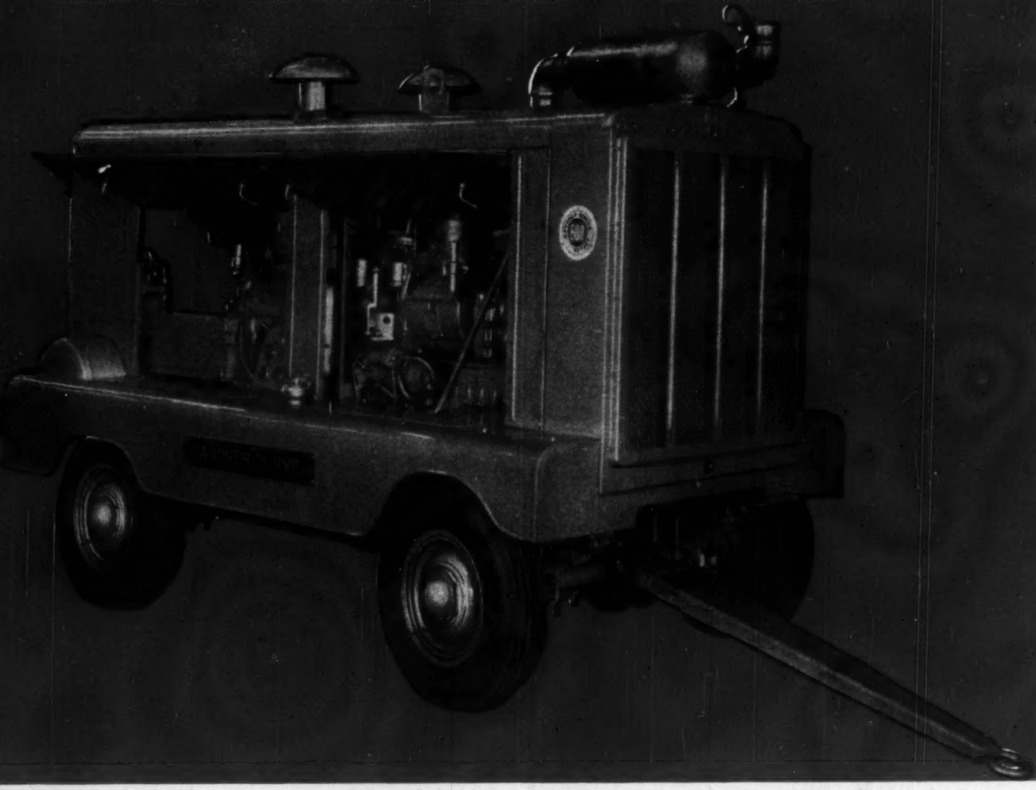

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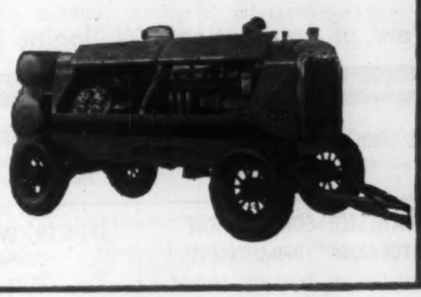

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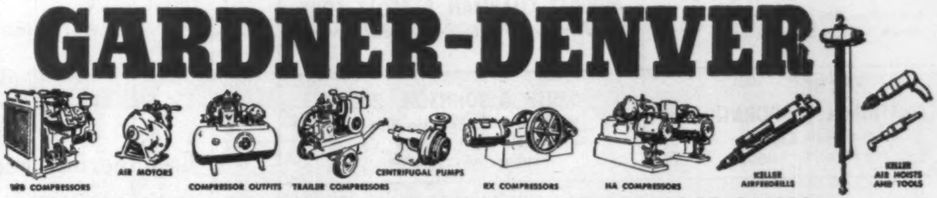

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B-024

READER COMMENT

On Unionization

SIR: The first paragraph of your item in the March 17th issue (p. 26) concerning the NSPE report against Engineering Unions has put the finger on the key point of the entire issue, "if management will cooperate in improving the salary and working conditions of its various engineering employees."

Having been an employee of one of the larger aircraft companies at the time that a union was voted into the engineering department, and having also worked for other companies at times when the union idea was rejected by the engineering employees, I have little doubt that this point is the key to the entire question. In my opinion, unionization occurs only when management forces it upon the engineering employees by neglect and abuse!

I am not surprised by the report of the NSPE committee. I am registered in three states, and at one time held membership in the NSPE. This organization does not speak as the representative of engineering employees, but rather as the representative of engineering employers. In my experience, the NSPE was dominated by consulting engineers and representatives of management. As such, the leaders of the organization were either employers in their own right, or were the employing representatives of the companies for which they worked.

Very few of the engineering employees of our larger companies have any cause to seek registration. Even among the employees of the consultants there is little incentive to registration. Those who register, and thereby become eligible to the NSPE, are the engineers who wish to establish a practice of their own, or who need registration as the management of companies which have public interest work.

THOBURN F. PETERSON
Assistant Professor
College of Engineering
University of North Dakota

Engineering Fees

SIR: E. Montford Fucik complains (ENR March 17, 1955, p. 8) that the engineering profession is being illogical in basing its fees for services rendered on a percentage of the construction cost. Yet, what is the alternate?

The fact that fees are based on a

Model 363 shown with car unloader. Lengths to 35 feet. Capacities to 200 tons per hour. Swivel wheels for radial stock piling. Wide range of accessories, including screens.

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READER COMMENT

fixed percentage of construction cost means that engineers seeking the appointment do not compete on a fee basis. There are standard fixed fees established by various engineering associations, and these are generally on a sliding scale depending on the magnitude of the job. This has been established practice in many countries for very many years and the fees are generally adequate to provide satisfactory remuneration. Fluctuations in construction costs usually follow a general trend, and the engineer's operational costs rise and fall accordingly. There may be the odd case where excessive competition brings down construction costs below the normal trend but the engineer must accept this risk.

I cannot agree that engineers are penalized by their own efforts in devising ways to save costs by clever designs. If by his own skill and experience, he can so design his work that, without sacrificing quality, construction costs are reduced, he will gain considerable well-earned publicity, which is usually reflected in an increased volume of future business.

EDGAR A. CROSS
Consulting Engineer
Toronto, Canada

CALENDAR

Regional Construction Conference, sponsored by the Cleveland Engineering Society, Cleveland, Ohio, April 11.

Wire Reinforcement Institute, Inc., spring meeting, The Greenbriar, White Sulphur Springs, W. Va., April 11-13.

Concrete Reinforcing Steel Institute, annual meeting, The Greenbriar, White Sulphur Springs, W. Va., April 11-16.

Conference on Biological Waste Treatment, Manhattan College, New York City, April 13-15.

American Wood-Preservers' Association, annual meeting, Hotel Jefferson, St. Louis, Mo., April 13-15.

Society of Automotive Engineers, Central Illinois Section, Earthmoving Industry Conference, Peoria, Ill., April 13-14.

National Engineering Conference of the American Institute of Steel Construction, Hotel Muehlebach, Kansas City, Mo., April 18-19.

Building Research Institute, annual meeting, Princeton, N. J., April 18-19.

National Air Pollution Symposium, Huntington-Sheraton Hotel, Pasadena, Calif., April 18-20.

Prestressed Concrete Institute, convention, The Lago-Mar Hotel, Ft. Lauderdale, Fla., April 21-22.

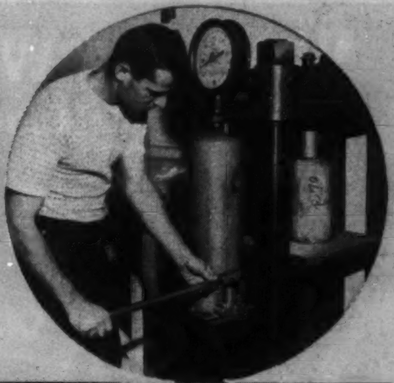
New York Section of the American Water Works Association, annual spring meeting, Hotel Statler, Buffalo, N. Y., April 21-22.

Society for Experimental Stress Analysis, spring meeting, Hotel Statler, Los Angeles, Calif., April 27-29.

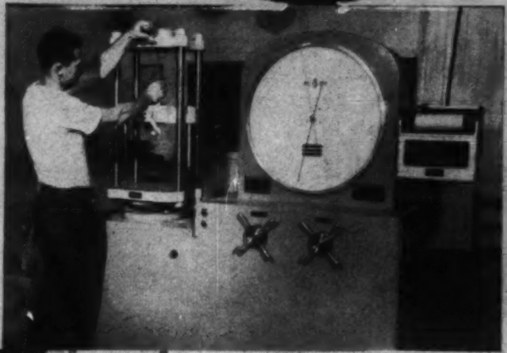
Society of American Military Engineers, annual meeting, Waldorf-Astoria Hotel, New York, N. Y., May 5-6.

Annual Conference for Engineers and Architects, Ohio State University, May 6.

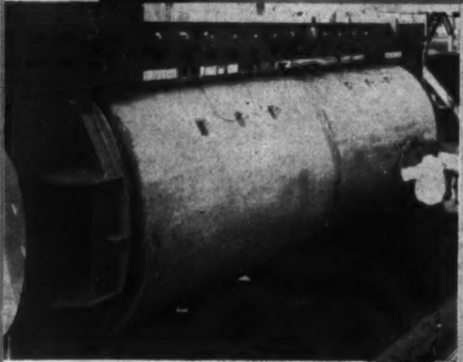
Purdue Industrial Waste Conference, Purdue Memorial Union, May 9-11.



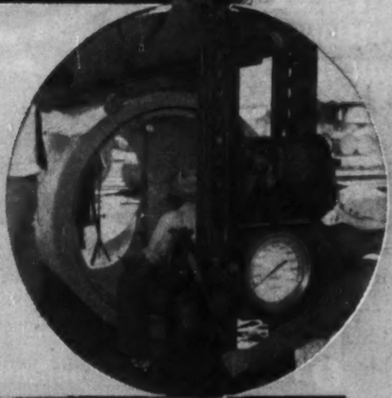
Standard 6"x 12" test cylinders are made from the same batch of concrete as the pipe, cured with the pipe in the same steam box and are subjected to compression tests.



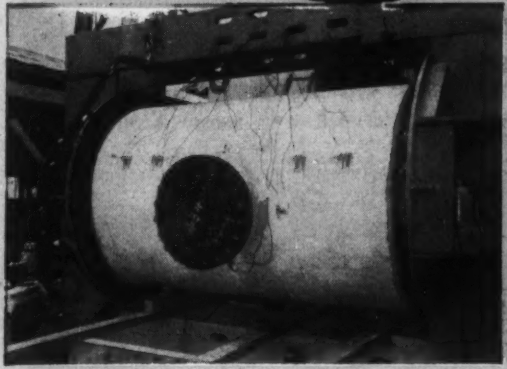
Steel reinforcement rods are tested to determine their physical properties. Stress-strain diagram may be plotted on recorder at right.



Completed pipe sections receiving hydrostatic test. Water pressure is increased until ultimate failure of the pipe section; research engineer makes periodic examinations as pressure goes up.



Resistance to external loadings is determined by careful checking as pipe receives three-edge bearing test.



Strain gauges give accurate record of behavior of pipe components under hydrostatic test.

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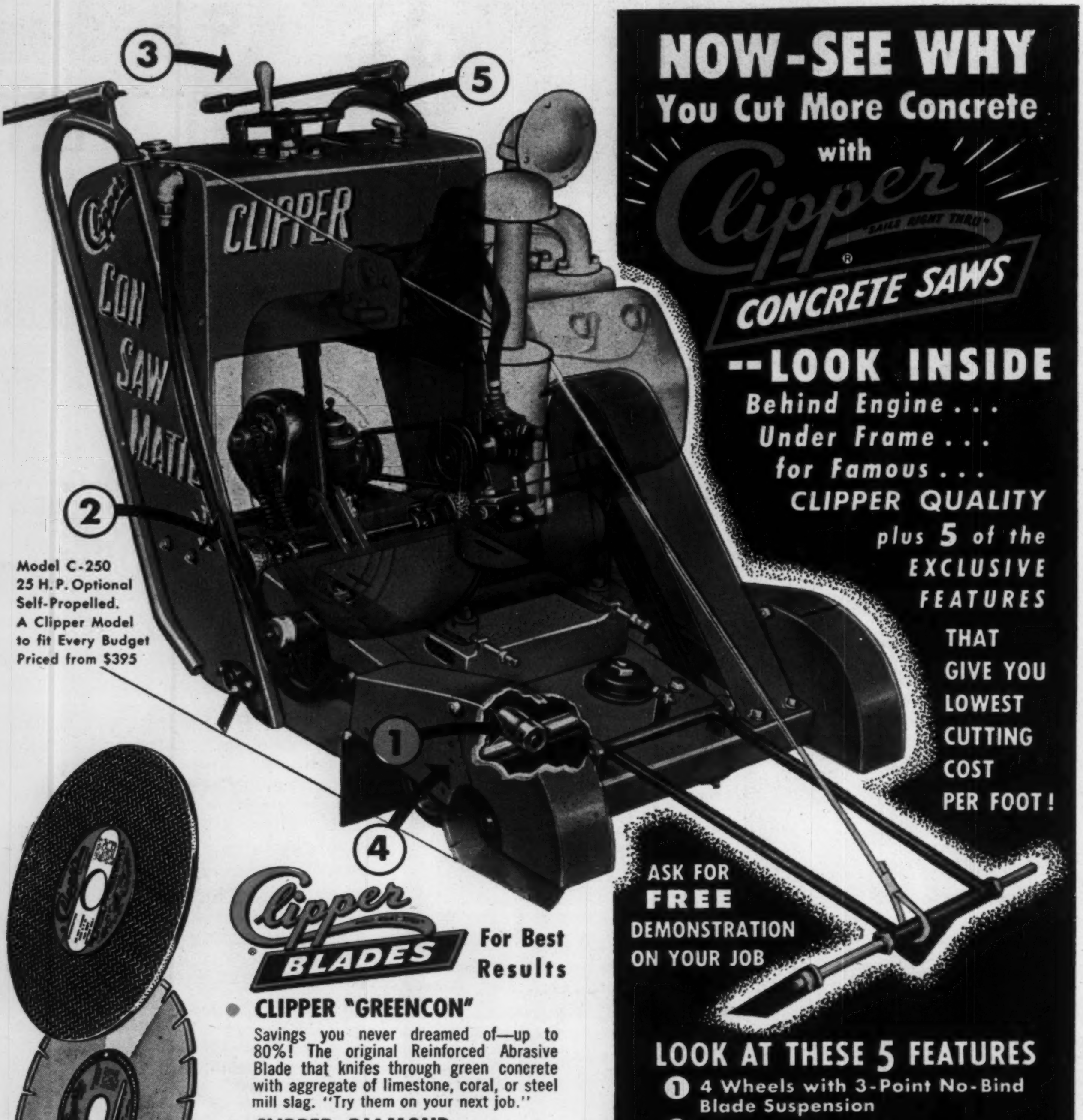

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THE CONSTRUCTION WEEK

WANTED: WATER EXPERTS—The legislature in New Jersey, where water supply is desperately needed but only politics so far has prevailed, has authorized another study of the situation. A seven-member legislative commission has been given $200,000 and four months to come up with recommendations. Time limit is to enable a water project to be included on the ballot next November, provided one can be agreed upon. The new commission's immediate problem is to find a firm or board of consultants to make the survey in the allotted time.

LICENSING LAW BY-PASSED—There were 1,199 bills passed by the New York State Legislature, which wound up its '55 session late last Saturday night, but there were no measures to affect the practice of engineering among them. Bills presented would have amended the state licensing law to allow practice of engineering by corporations other than the few under a "grandfather clause" in 1935 legislation (ENR Jan. 20, P. 17). But none of these bills reached the floor in either Senate or Assembly. All died in committee.

VOLCANIC DEFENSE—An Hawaiian pilot project has demonstrated successfully that a lava flow can be diverted by inexpensive earthworks. Five barriers pushed up by as many bulldozers in 32 hours have turned a tongue of lava away from 80 acres of coffee land. The current erruption from Kilauea Volcano, smaller sister of Mauna Loa, already has overrun 4,000 acres, causing crop damage, isolated several villages and cut roads in many places and led to a request for $1 million in disaster relief from Washington.

Though damming a lava flow has proved unworkable, Gordon A. MacDonald, chief of the Hawaiian Volcano Observatory, and other volcanologists have been convinced for some time that diversion is the answer. Success of the pilot project has re-kindled hopes that the Army Engineers will dust off plans for a system of lava dikes to protect Hilo (pop. 25,000) from the always formidable threat of Mauna Loa.

HIGHWAY STANDARDS—If the higher road construction standards proposed by the American Association of State Highway Officials are approved by a majority of states and then adopted by the Bureau of Public Roads, Virginia will have to build more divided four-lane, limited-access highways then are currently needed. Burton Marye, Jr., chief engineer of the Virginia Highway Department, says that due to uncertainty over the standards, his department has held up drawing of plans for improvements on interstate routes. The order, however, has not interfered with construction as yet. Among proposed changes is one specifying 275-ft rights-of-way; Virginia's present requirement is 160 ft. Another calls for complete control of access on interstate roads carrying more than 2,000 vehicles daily.

40

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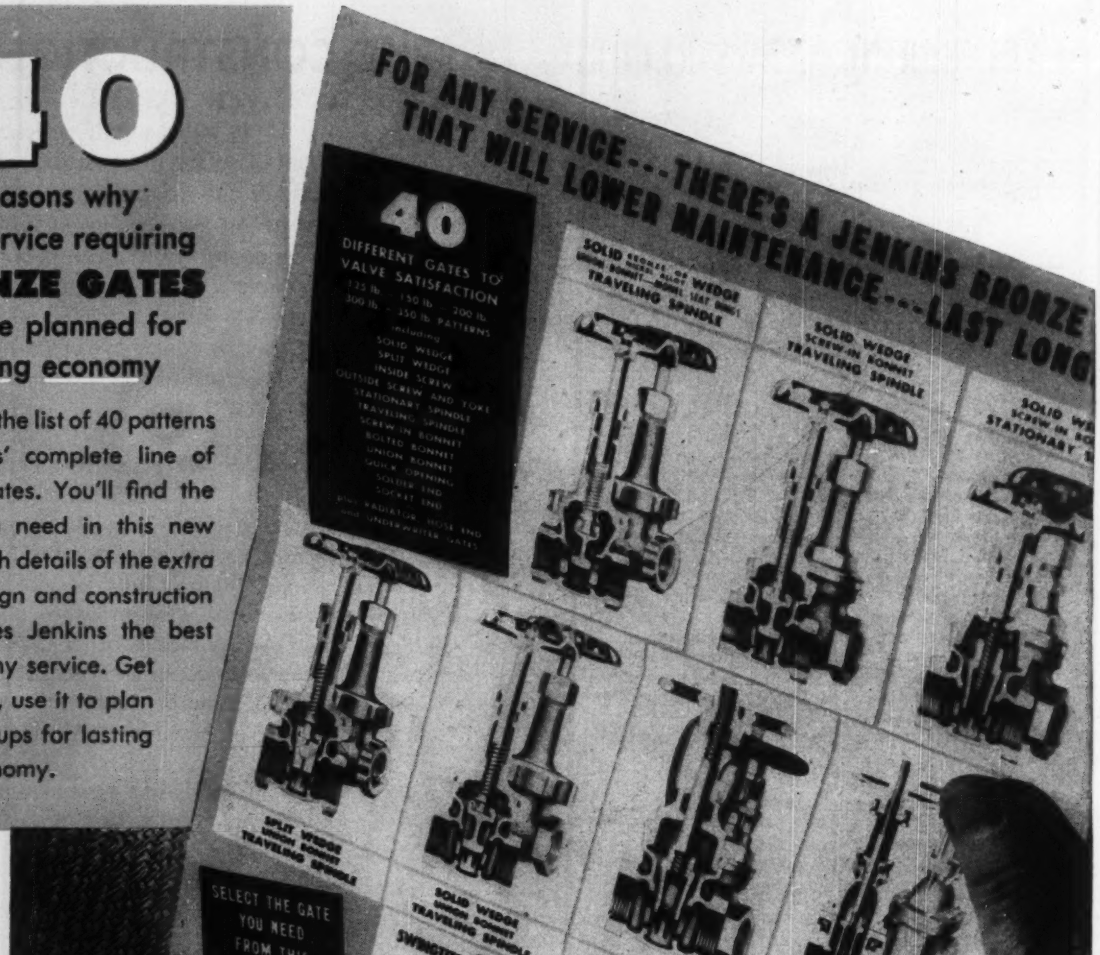
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WASHINGTON OBSERVER

Construction of atomic plants for electricity will be booming soon. That is newest and most optimistic prediction yet made by atomic authorities—this time, W. Kenneth Davis, who is director of AEC's Reactor Development Division. He sees an atomic-electric buildup to 100 million kw over the next 22 years, a capacity equaling today's total plant. By 1980, the U. S. will have 175 million kw in operation.

Davis predicts: By 1960, building of two million kw; five million kw in service by 1965; 27 million kw by 1970; 83 million kw by 1975; 100 million kw by 1977, and 175 million kw by 1980.

•

Switch in Eisenhower advisers shows concern over construction boom that the Administration has been eying for some months now.

A top expert on mortgage lending has been named to the Council of Economic Advisers. R. J. Saulnier, professor from Barnard College, was the Federal Reserve Board's chief adviser on "Regulation X" mortgage control during the Korean war.

Should a crimp be put in the housing boom? That's the question Saulnier will be called upon to answer.

•

Top Administration officials pooh-pooh tightening of FHA credit now being applied in some cities around the country.

Newest city to feel FHA restrictions on lending to homebuilders is Dallas, and much has been made of this action in Washington and elsewhere around the country.

Here's what's happened: Builders have been barred from getting any FHA "firm commitments"—which means FHA for the time being will not insure a builder's mortgage, but only a home buyer's mortgage. Any builder, however, with a house and a buyer that meet FHA qualifications gets FHA mortgage insurance to help him make the sale.

•

Similar restrictions now apply locally—not only in Dallas but in two other non-defense areas (Portland, Ore. and Tucson, Ariz.), and 14 areas where demand for housing has been largely affected by big military and atomic energy installations.

Similar limitations on builders have been lifted in a couple of towns in recent weeks: Clairmont and Pomona Valley, Calif.

Nationwide tightening of credit across-the-board is not in prospect, top housing officials in Washington still insist. They don't see the local moves as representing any trend. They point out that the so-called restriction in Portland has been the rule for two years.

•

A speedup on construction legislation is expected after Easter. The Administration claims there will be a pickup on highways soon. The President's plan is tied up in disputes over financing, but the White House still says it is not pessimistic. Senate committee hearings are about over. The House roads subcommittee will begin work on April 18. Chances are still poor.

School legislation is bogged down in dispute. Chances are slim.

Public housing is running into less trouble than previously. The House this year did not slice the program.

Big dam and public works programs—Upper Colorado and so on—are beginning to move. The Senate is ready to debate Upper Colorado, and the House committee has closed hearings. The project will get committee approval.

At the Denver water dam one hose takes the place of many...

IT'S U. S. ROYAL CORD AIR HOSE

The immense water-supply dam just completed for the city of Denver, Colorado, required over 8,000 feet of air hose in its construction.

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(2) The contractor found there was no need to go easy on U. S. Royal Cord. *No* need for cribbing, no time wasted by workers in selecting or storing away special hose for special jobs. *No money tied up in stocking specialized hose.*

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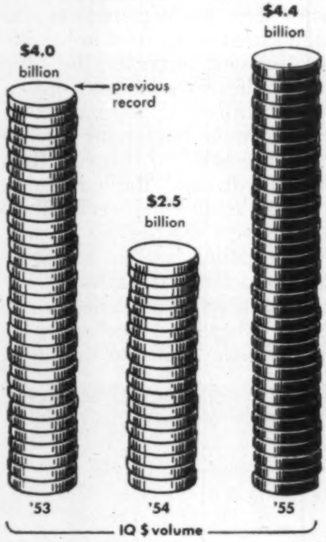
Construction contracts hit first-quarter high . . .



with record-breaking awards for these types of work . . .

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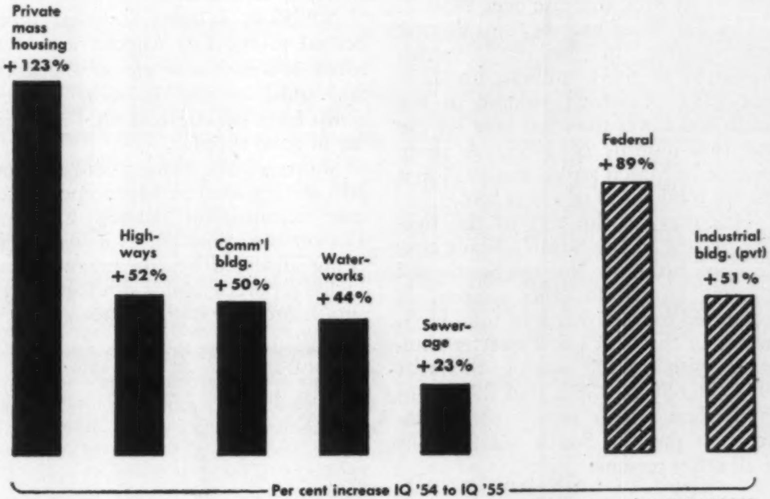

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ENR's Reports Show:

First Quarter Contract Awards Set Record

The heavy construction industry is enjoying the greatest boom in history.

In the first quarter of this year, contract awards reported by ENR shot up to a record $4.4 billion, 8% higher than the previous first quarter record set in 1953 and a whopping 63% above the low level of last year.

The total included nearly $2 billion of March awards, the highest for any month on record except for those months in 1950 and 1952 when the big atomic energy plant contracts were let (see page 113).

All types of heavy construction contributed to the record total, and all sections of the U. S. shared the bigger volume of business. The boom looks solid, well-balanced and likely to continue.

ENR spotted the upward trend in a January forecast that heavy construction contract awards would rise 8% in 1955 over the 1954 level to a total of $15.6 billion, just a shade under 1952's record $15.7 billion (ENR Jan. 6, p. 21). So far, contract awards make this forecast look conservative.

• **Record highs**—Private mass housing, commercial building, highways, waterworks and sewerage contracts all are setting new records so far this year. They are chalking up tremendous gains over 1954 ranging from 123% for private housing to 23% for sewerage (see chart).

Easy financing is spurring the housing boom. And the high level of housing construction helps explain the big increases in waterworks and sewerage contract awards.

The record volume of highway awards reflects the large number of toll-road jobs which cleared drawing boards and financing hurdles late in 1954. Increased federal aid also is contributing to the upward trend. The latest boost in aid funds voted by Congress will not be available until July 1, but it should help keep highway business rolling during the second half of 1955.

The most significant increases are in federal work—up 89% over 1954—and industrial building—up 51%. The $423 million in federal contracts is the biggest quarter since the second quarter of 1954. The $519 million of industrial awards is a healthy level but much below the peak of the Korean war years.

Industrial and federal contracts show big percentage gains partly because awards were so low a year ago. These gains will narrow later this year, but both types are expected to end 1955 substantially higher than last year. ENR forecast a 9% increase in federal work and a 6% gain in industrial contracts.

Military airport construction accounts for much of the sharp rise in federal construction awards. Federal airport contracts total $189 million for the first quarter of this year, 81% up from last year's level.

Other types of work which are ahead of last year are: earthwork and waterways, up 24%; bridges, up 5%; public building other than housing, up 2%; public housing, up 5%; private unclassified, up 190%, and public unclassified, up 59%. Increased pipeline construction is a big factor in the huge gain for private unclassified awards.

• **By regions**—Contract awards made big percentage gains over last year in every region of the U. S. except the South where the rise was a modest 6%.

In New England, contracts set new record highs for the first quarter at $214 million, a 78% gain over 1954. In the Middle Atlantic states, contract

. . . First quarter contract awards

awards totaled $1,339 million, the highest for any region.

It was the second highest first quarter on record in the Middle West and West of the Mississippi regions. The Middle West had $959 million of awards, 65% more than a year ago, and West of the Mississippi had $949 million, an 81% increase over 1954.

The Far West had its third highest first quarter in history. Awards amounted to $451 million, up 82% over 1954. Contract volume in the South was lower than last year for the first two months of 1955. A sharp increase in March pulled the 1955 first quarter total ahead of a year ago.

This may be the end of the two-year decline in the South's heavy construction business. But the South still is losing ground to other regions. It accounted for only 9.8% of total U. S. awards in this year's first quarter compared with 13.1% during the year 1954, 16.6% in 1953, and 27.4% in 1950 when atomic energy plant construction put the South out in front of all other regions.

- **Failures level off**—Last year's sharp rise in contractor failures—they climbed 27% to a record high for the year—is beginning to level off because of the big upswing in construction business. Failures reported by Dun and Bradstreet during January and February were only slightly higher than a year ago, and weekly reports for March are running lower than for March 1954. Indications are that the first quarter of this year will have fewer contractor failures than the record high for the same quarter a year ago.

But the number of failures is not likely to go much below last year's level. The reason is the stiff competition in the construction industry. Even though new work has increased substantially, contractors have plenty of unused capacity to handle it. Under-estimate bidding for all sorts of heavy construction jobs is evidence of this.

The larger volume of business is likely to produce some spotty material shortages, however. Cement will be hard to get in many areas. Steel rock lath, gypsum board and lumber may be tight here and there.

Baltimore reports that two major cement producers in that area are sold out until late fall. "With all the work that is scheduled," the report says, "it definitely looks as if there will be a shortage of cement this summer."

Chicago also reports that a cement shortage may be in prospect. Highway construction in that area will require large amounts of cement this year. The Indiana toll road, for example, may make it difficult for other cement users to get adequate supplies. One big cement firm already has told its dealers they will get less cement than last year if the Indiana toll road goes ahead on schedule.

A serious cement shortage is expected in the Los Angeles area. Cement deliveries now are on allocation, and some cement is being brought down from the north. Other materials are in good supply.

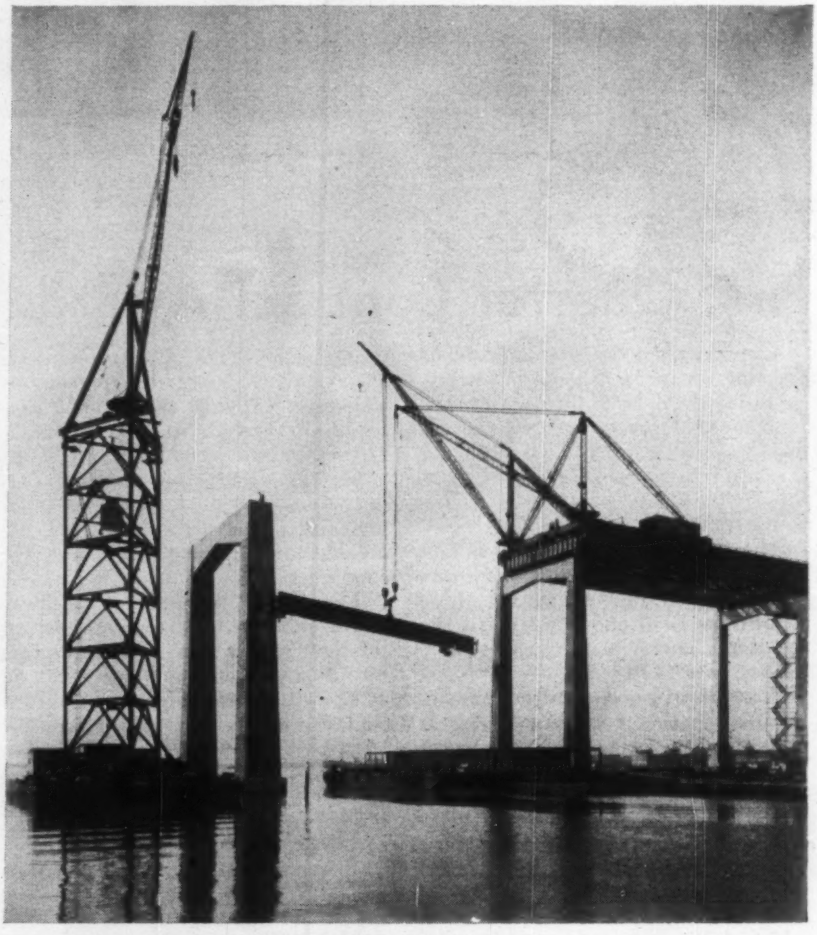
Shortages of gypsum board and rock lath are reported in Minneapolis, Boston, Birmingham, Kansas City and Denver. In some places deliveries are being allocated by the manufacturer. Dallas reports a minor shortage of gypsum board now has disappeared.

New York reports heavy demand for cement for major turnpike and highway jobs, the New York Thruway, the Connecticut Express and the Massachusetts turnpike all will be under construction this year. Spotty shortages of cement are expected in the third quarter.

Steel also will be in short supply in some areas. The Baltimore office of one major steel producer reports it is sold out on reinforcing steel until midsummer. In some instances, the same situation applies to structural shapes.

"Local distributors, in some cases, have ordered more reinforcing steel in the first two months of this year than they used all last year," the report said. "It looks like reinforcing steel will be put on quota very shortly."

In Minneapolis, stainless steel is reported on allocation at the mills, but this has not affected deliveries in the area so far. Elsewhere, steel generally is in good demand with no shortages.



Traveler Sets Big Bridge Girders

The last two girders of the west approach of the $40-million Newark Bay Bridge were among the longest ever fabricated at Bethlehem Steel Co.'s Pottstown, Pa., works. They measured 170 ft. long, 11½ ft deep and weighed 108 tons each. The traveler lifted them into position atop 127-ft-high concrete piers. With approaches the six-lane bridge will be 9,560 ft. long. It will form a part of the Hudson County extension of the New Jersey Turnpike.

State, Local Governments Plan Big Spending

Census Bureau reports 5,620 'ready-to-go' public works projects costing $1.8 billion and $5.8 billion of jobs in planning

The first really comprehensive federal survey of state and local plans for public works construction shows that $27.7-billions of projects are in the mill.

This huge reservoir of business for contractors was spelled out in a survey of 4,000 non-federal governments—all the states and the largest cities and counties—conducted by the Bureau of Census for the Council of Economic Advisers. Somewhat similar surveys of plans have been conducted in the past, but none have ever been so comprehensive and complete.

The figures cover plans in the works as of October 1, 1954, but do not include any construction scheduled to get under way by June 30, of this year.

"Ready-to-go" projects are those for which plans and specifications are finished, land has been obtained, funds are on hand or arranged for and bids could be taken in a matter of weeks.

"Planned" projects are those for which plans are partially complete, but which could be brought to a "ready-to-go" status in six to 18 months.

"Programmed" projects are those included in a master plan or capital budget, for which preliminary costs are estimated and tentative descriptions are available, but not detailed plans.

The survey reported a total of 71,639 projects of all kinds which would cost more than $25.3 billion for construction and over $2.3 billion for land. Of these, 5,620 were "ready-to-go." They would cost $1.8 billion for construction and $169 million for land.

"Planned" projects numbered 17,215. They would cost $5.8 billion for construction and $431 million for land. "Programmed" projects totaled 48,804. Their estimated cost was $17.8 billion for construction and $1.8 billion for land.

In the "planned" category, one-half the governments indicated they lacked funds to complete preparation of plans. About one-fourth also lacked authority to complete their plans. In the "programmed" category, almost four-fifths of those reporting lacked funds to complete preparation of plans.

The 48 state governments accounted for more than one-fourth of the projects and more than one-third of the dollar volume of the total of all governments reporting.

There were 5,022 projects estimated to cost more than $1 million each. The total cost of these projects amounted to $17.2 billion for construction and $1.8 billion for land. Projects to cost between $100,000 and $1 million numbered 24,899. They would cost an estimated $6.8 billion for construction and $439 million for land. Projects of less than $100,000 each totaled 41,718. Total cost would be $1.4 billion for construction and $74 million for land.

About 43% of the projects reported were highway or street construction projects. This type of construction accounted for 36% of the dollar volume of estimated construction costs and two-thirds of the estimated cost of land to be acquired for all types of projects. Plans for schools and libraries accounted for the next largest number of projects and percentage of estimated costs.

Census officials noted that by not including work in progress or work to be started by June 30, they eliminated a large volume of construction work that will bulk large in the coming months, and even in the next year.

The Census questionnaires went out last October. Reports on individual plans of states, cities and counties are not available, since their replies to Census were given on a confidential basis.

State and local spending for public works has been constantly growing during recent years and is counted on by Administration officials as a key factor in the nation's economy. Here's how their spending for construction went during the most recent three years for which figures are available (millions of dollars):

1953	$6,535 plus $691 federal aid
1952	$6,096 plus $619 federal aid
1951	$5,957 plus $479 federal aid

Canadians Plan to Build Atomic Power Plant

Atomic Energy of Canada, Ltd., a government-owned organization, and the Hydro Electric Power Commission of Ontario have announced that they will build jointly Canada's first atomic power plant.

Estimated cost of the plant is $15 million. AECL will pay $10 million of the cost, and Ontario Hydro the remaining $5 million. A contract for the reactor has been awarded the Canadian General Electric Co., Ltd. The plant is expected to be in operation by mid-summer of 1958.

Survey of Construction Plans of State and Local Governments

(Dollar amounts in millions)

	ALL PROJECTS			READY-TO-GO PROJECTS			PLANNED PROJECTS			PROGRAMMED PROJECTS		
		Estimated cost			Estimated cost			Estimated cost			Estimated cost	
Type of construction	Number	Construction	Land	Number	Construction	Land	Number	Construction	Land	Number	Construction	Land
All types	71,639	$25,349	$2,361	5,620	$1,814	$169	17,215	$5,759	$431	48,804	$17,776	$1,761
Residential	1,146	1,175	236	105	226	38	246	283	58	795	666	140
Educational	10,546	3,865	133	734	261	10	2,451	852	27	7,361	2,752	96
Highways	30,851	9,174	1,595	1,962	658	108	7,814	2,184	285	21,075	6,332	1,201
Hospitals	1,928	1,343	13	83	52	(1)	390	200	2	1,455	1,091	11
Sewerage facilities	8,604	2,411	18	791	171	2	2,455	724	5	5,358	1,517	11
Water supply systems	4,825	1,918	139	668	110	2	956	270	14	3,201	1,539	123
Other utilities and enterprises	3,308	2,759	68	390	87	2	961	609	10	1,957	2,062	56
Court, police, fire, and general administrative buildings	3,264	1,010	32	199	48	1	465	180	3	2,600	782	28
Other public construction	7,167	1,693	128	688	201	6	1,477	458	27	5,002	1,034	95

Note: Because of rounding, detail may not add to totals. (1) less than $500,000.

State Legislatures

Bridge, highway projects cleared by legislatures in New York, Washington

With adjournment of the legislative sessions in the states of New York and Washington, the groundwork has been laid for construction of a number of multi-million-dollar bridge and road-building projects.

New York legislators gave the go-ahead to the Port of New York Authority and the Triborough Bridge and Tunnel Authority for a $600-million program for improving Greater New York City's arterial highway connections (ENR Jan. 20, p. 28). And, they asked the voters to decide in November on a $750-million highway bond issue, which if approved would mean a two-cent gas tax increase and a three-cent hike in the diesel fuel levy.

Measures aimed at accomplishing nearly $750 million of highway and bridge construction—$500 million of it to be financed by tolls—were approved by the Washington State Legislature.

• **New York**—The New York City program, which can be started at an early date, involves construction of three toll bridges costing a total of $379 million. These projects are: (1) a $204-million suspension bridge, the world's largest, across The Narrows of Upper New York Bay between Staten Island and Brooklyn; (2) addition of a six-lane lower deck to the George Washington Bridge at a cost of $82 million; and (3) the $93-million Throgs Neck suspension bridge across the East River.

These matters also will be decided by the voters on Nov. 8:

• Whether to permit use of $50 million in already authorized state housing bonds for loans to non-profit or limited-profit private housing corporations.

• Whether to increase from $25 million to $34 million the ceiling on annual state housing subsidies.

• Whether to allow the legislature to permit cities to issue bonds for construction of sewage disposal or drainage facilities in cases where the installations will also be used to provide service, on a contract basis to neighboring communities. (A similar measure was adopted by the voters last year to permit communities to borrow for building water supply facilities that would also serve other communities.)

• Whether indebtedness for sewage disposal and drainage facilities should be exempted in figuring municipal debt limits.

A hardy perennial among controversial projects—Panther Mountain Dam—also will be listed on the Nov. 8 ballot. This proposed project in Herkimer County would be designed to regulate the flow of the Moose and Black Rivers to prevent recurring flooding of farm land and to improve the Watertown water supply. The project has run into heavy opposition because it would necessitate flooding some of the state forest preserve acreage.

• **Washington**—Largest toll project in the State of Washington is the $227-million Tacoma-Seattle-Everett freeway, on which construction may begin next year. Next largest is the $135-million bridging of Puget Sound and Hood Canal, for which the legislature provided study funds.

To aid financing of the bridges, the legislature authorized two or more counties to issue bonds for supplementary financing, if necessary. Another measure which should help in financing provides that the bridges and the Washington state ferries can be integrated financially.

Funds were provided to prepare plans for a second $20-million floating bridge over Lake Washington, east of Seattle. This project is expected to go out for construction bids this fall.

The legislature also permitted the restoration of tolls on the present Bremerton-Manette Bridge to facilitate construction of a second $5-million bridge in the same vicinity. Tolls also may be restored to the Vancouver-Portland interstate bridge to permit toll financing of a companion bridge by the states of Washington and Oregon. Authorization was granted for another interstate bridge farther up the Columbia River.

BPA Cuts Interruptible Power Deliveries 75%

Bonneville Power Administration has cut interruptible power deliveries to 14 Pacific Northwest industries by a full 75%, and announced that between the hours of 6 A.M. and midnight all federal hydroelectric resources will be used to meet firm energy commitments.

BPA said the cut would last for an indefinite period, in spite of higher temperatures and general rains over western Oregon and Washington. Neither of these favorable developments is likely to be reflected immediately in higher stream flows on the Columbia River.

The 14 industries affected by the cutback are mainly aluminum and chemical companies. Ten of them are making up the full amount of lost interruptible by buying steam-generated power or imported hydro from British Columbia through BPA.

BPA may have to drop the remaining 25% of interruptible, but firm power commitments are not in danger.

New Federal Aid

Congress is studying plans to aid local organizations build irrigation works

Congress has before it two measures authorizing new forms of federal aid to local organizations for the construction of irrigation works.

The first is a bill intended to save taxpayer dollars by letting local water users build their own distribution facilities. Its supporters claim that, in many cases, this will make possible large savings in construction costs—30% to 50% or more.

The local organizations would get federal interest-free loans to engineer and construct the systems themselves. Currently, the U. S. Bureau of Reclamation does this work.

The second bill would authorize federal loan and grant assistance to projects costing no more than $5 milion, possibly anywhere in the country rather than just in the 17 western states. The idea is to extend federal assistance into other areas of the nation where irrigation (usually supplemental) is becoming more necessary.

Prospects for both bills are good. There is little or no contention over loans for distribution systems on federal projects. This bill already has passed the House. A bill last year passed the House and cleared the Senate committee but failed to reach a Senate vote.

Some differences remain to be ironed out on the so-called "small projects" legislation authorizing loan and grant aid for non-federal as well as federal projects. In the last Congress, this measure also passed the House and was reported favorably with amendments by the Senate committee but did not come up for a Senate vote.

Under the legislation now in Congress, projects would be eligible for federal grants as well as for federal loans. The grant would be limited to the sum of the nonreimbursable costs which the federal government would bear if the development were to be constructed as a federal project. Those costs, in general, represent the so-called national benefits of the project.

Every project applying for assistance would have to demonstrate financial feasibility to the Secretary of the Interior and to the state government before the Secretary could negotiate a contract. In addition, the Senate again this year is considering an added requirement that the proposal of the local water users' organization be submitted to every state in the river basin for comment before anything be done about authorizing the project or negotiating a contract.

New Bay Plan Gets Backing

Consultants, state engineer recommend more study of plan to increase supply of fresh water in San Francisco Bay area

The California Water Project Authority has under consideration a new plan to increase the supply of high quality, fresh water in the San Francisco Bay area.

The scheme was suggested by Cornelus Biemond, a Dutch engineer who was called in as a consultant to study the feasibility of salt water barriers across the arms of the bay. He is director of the Amsterdam waterworks and a member of the Zuyder Zee Commission. His suggestion is recommended by a board of consultants which has studied the problem.

The Biemond plan would include a diversion far inland in the Sacramento-San Joaquin River delta region, an extensive system of levees and a fresh water conduit across the delta area. It would cost an estimated $119 million and furnish 1,000,000 acre-ft of high quality water a year.

• **Downstream barriers not practical**—Two reports to the Water Project Authority last week recommended further study of the Biemond plan. But they said other proposals for various barriers across the arms of the bay, including the $1.4-billion Reber plan (ENR Nov. 24, 1949, p. 28) were not practical.

One report came from a consulting board headed by Raymond A. Hill as chairman and including Charles E. De Leuw, Hans Kramer, Malcolm Pirnie and Philip C. Rutledge. The other was prepared by the California Division of Water Resources under State Engineer A. D. Edmonstron.

• **Water quality is the pitch**—The consulting board said the various barrier schemes previously proposed were "fatally defective in their failure to assure a water supply of acceptable quality."

It said the primary function of a barrier should be to develop new reservoirs of fresh water. The various barrier plans would seek to accomplish this by conserving fresh water that now flows into the delta area, by blocking the intrusion of salt water in the upper bay, by trapping some flood flows and by capturing return irrigation water.

But the board concluded that, during drought periods when fresh water is needed most, there would be serious doubt as to the usable quality of the water behind the barriers. Its quality might be impaired by navigation lock operation, by mineral salt content of return irrigation flow and —perhaps most important of all—by upward leaching of salts impregnated in bay bottom mud.

• **Future needs**—The state engineer's report included an analysis of future water needs in the San Francisco Bay area. It concluded that the metropolitan areas of San Francisco and Oakland will have adequate supplies with further exploration of mountain sources in eastern California. North bay areas will need an additional 400,000 acre-ft a year. The Livermore and Santa Clara Valleys in the south will need from 80,000 to 150,000 acre-ft a year.

The report estimated cost of the Candlestick Point proposal (see map) at $129 million, of Point San Pablo at $205 million, Dillon Point $171 million and Chipps Island $182 million. It said none of these projects would be self liquidating from the sale of water at $2.50 an acre-ft for irrigation water and $30 an acre-ft for industrial and municipal water.

• **State engineer's recommendations**—Because of these considerations, the state engineer recommended that no further consideration be given to barriers below the Chipps Island site. But he did recommend a more detailed study of the Biemond plan in cooperation with the Bureau of Reclamation and the Corps of Engineers.

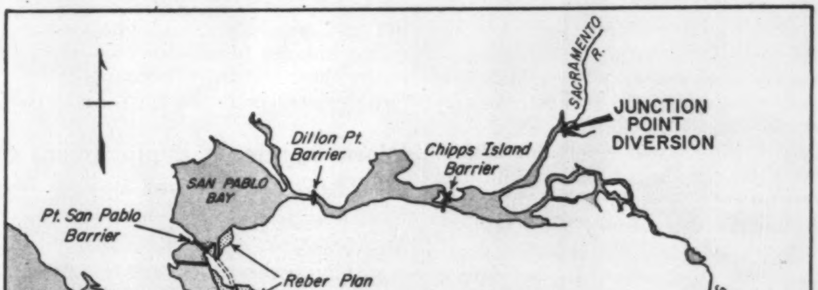
Primary objective of the Biemond plan would be to furnish high quality water to the San Francisco Bay area and to the rich farm lands in the delta area. It also would improve the quality of the water to be transferred south by the Central Valley project and the Feather River Project.

The Junction Point Dam at the point the Sacramento River enters the delta—a key feature of the Biemond plan—would be just a diversion weir. The Sacramento, San Joquin and Mokelumne Rivers would be separated from the delta by high flood levees and permitted to become salt.

Farm lands that lie below sea level in the delta area would be protected by lower levees, and the delta sloughs would be kept fresh for irrigation use. A conduit or channel would be constructed across the delta to carry fresh water south. This conduit would be carried under the San Joquin River by three 32-ft dia fresh water siphons.

• **Partnership project?**—The Biemond plan could be developed by stages. It also might be developed as a partnership project with participation by the Bureau of Reclamation and the Corps of Engineers because it would have flood control functions and would improve the quality of the water for USBR's Central Valley Project.

More detailed study will be needed before any construction is undertaken. Probably both the state of California and the federal government will participate in further planning for development of the fresh water resources of the area.



BARRIER PLANS for San Francisco Bay that were studied by two groups of engineers. All were found not feasible except the Junction Point Diversion.

Non-Political Road

President and Congress team up in support of the Inter-American Highway

Congress and the Administration are teaming up to put through a $112-million program for three-year completion of the Inter-American Highway to the Panama Canal. Legislation to carry out the plan is slated to start on its way through Congress immediately after the Easter recess.

Vice President Nixon sparked the idea following his recent Central American visit. Last week President Eisenhower put his weight behind the project in a strong letter to the House and Senate. The House roads subcommittee already had held one closed meeting on the proposal and reportedly favored the idea in principle.

In the Senate, too, committee sentiment is favorable. Sen. Dennis Chavez, chairman of the public works group and long-time champion of the project, renewed his support on the floor as soon as the President's message reached the Capitol.

Early signs point to fairly fast and favorable action in both houses—pretty much for the same reasons advanced by Eisenhower in his letter. The President said that "for economic and political reasons now is the appropriate time to speed completion" of the highway. He cited economic development, increased trade, better relations between peoples and the security importance of a completed route as advantages that argue for rapid construction now.

Accelerated building will step up the cost. Earlier estimates for completing the highway came to a little less than $90 million. The new program would take an estimated $112,470,000. On the usual two-to-one matching basis, the United States would pay just under $75 million and the cooperating countries almost $37.5 million.

Few—if any—of the affected countries have the money to put into a three-year program. Present plan is to arrange Export-Import Bank loans or similar financing aids to help the Central American participants carry their share of the burden.

In the Federal-Aid Highway Acts of 1952 and 1954, Congress authorized $56 million for the Inter-American Highway over a period that still has four years to run. Only $6.75 million of this has so far been appropriated.

Completion of the road is a clearly established objective of U. S. policy, President Eisenhower noted. Construction has been under way sporadically since 1934. Altogether, Congress has appropriated $53.7 million to date, a big part of it for work done by the Corps of Engineers during World War II.

Work to be done under the program would close the gaps in an all-weather paved road for nearly 1,600 mi from the Mexico-Guatemala border to the city of Panama. The thousands of miles in Mexico leading from several points on the U. S. border to Guatemala already are in service. The missing links lie farther south.

At present, nearly 190 mi of this 1,600-mi section is impassable at any season. Much of the impassable mileage is through mountainous country and jungle.

There are now some 520 mi of paved road. Another 265 mi are up to grading standards, with an all-weather unpaved surface. Nearly 620 mi require both grading and surfacing, although these parts are now passable at some seasons.

Heaviest work will be on the impassable sections in Costa Rica, Guatemala and Panama. Costa Rica has a 134-mi gap leading to the Panama border where it joins a similar 14-mi section in Panama.

Another difficult 25-mi section in northern Guatemala is up for bids this week under a $2.1-million cost-sharing program worked out last year. An additional $2 million to $3 million will be needed to complete this gap.

In recent years, the Central American countries have been doing their work on the Inter-American Highway by force account—or occasionally with domestic contractors. But the Guatemalan bids this week are open to outside contractors. Mexican roadbuilders have been itching for a chance to bid in Central America. The Guatemalan bidding foreshadows an opportunity there and in other countries for outside firms, including U. S. builders.

Work Begins on Replacement Of Three Ohio River Locks

Two contracts have been let for preliminary work on the $50-million New Cumberland locks and dam project on the Ohio River near Wellsville, Ohio. Col. Ralph A. Lincoln, chief, Pittsburgh District, Army Engineers, said work will probably begin early in April.

The C. F. Replogle Construction Co., of Circleville, Ohio, was awarded a $276,907 contract for relocation of 3½ mi of State Rt. 7 at Stratton, Ohio. Watcher Bros Inc., of Mingo Junction, Ohio, was low bidder at $374,113 to build conduits, tunnels and water lines under the new road for use by the Ohio-Edison Power Co.

The New Cumberland installation will replace three Ohio River locks, which are outmoded and deteriorating.

Baltimore Tunnel

Low bid of $29.9 million wins contract for tunnel under Baltimore harbor

The Maryland State Roads Commission has awarded a $29.9 million contract for construction of a twin-tube tunnel under Baltimore harbor to Merritt-Chapman & Scott Corp. of New York, the low bidder for the job (ENR March 17, p. 27).

The trench-type tunnel will run about 6,300 ft and carry two lanes of traffic in each of its twin tubes. Work will get underway immediately, and plans call for completion by Dec. 1, 1957. With its 14.3 miles of approaches, the tunnel will provide an express route through the southeastern and eastern sections of Baltimore. Officials said it will be the first twin-tube facility to be built by trenching and sinking of fabricated sections.

The tunnel will have 21 sections, each approximately 300 ft long. These sections will be fabricated under subcontract at three shipyards—nine at the Camden, N. J., yard of the New York Shipbuilding Corp., a subsidiary of Merritt-Chapman & Scott, eight at the Sparrows Point, Md., yard of Bethlehem Steel Co., and four at Baltimore by the Maryland Drydock Co.

In its bid, Merritt-Chapman & Scott Corp. listed only the New York Shipbuilding Corp. as subcontractor for the steel fabrication, but the contract, for more than $10 million of steel work, was split among the three firms after state and municipal interests protested against letting all the steel fabrication be done outside the state.

The two tube-casing units in each section will be fabricated independently and then joined by a framework of steel members. A tray-shaped steel framework will fit around the bottom of the tubes. Concrete will be placed underneath and between the tubes before each section is launched, and more concrete will be added between the tubes to sink the section after it has been floated into position.

The bottom of the tunnel will be about 101 ft below the river's surface at the deepest point. Each tube will have a roadway 22 ft wide, a walkway of 2 ft, 2 in. and a vertical clearance of 14 ft.

Arundel Corp. of Baltimore will be sub-contractor for the dredging work for the tunnel. Engineers estimate approximately 2.6 million cu yd of river bottom will be excavated.

The tunnel was designed by Singstad & Baillie. The J. E. Greiner Co. of Baltimore is consulting engineer for the project.

Low Bidder by 1%

Bid $26,000 lower than No. 2 wins $26-million Long Sault Dam contract

The combine of Walsh Construction Co., B. Perini & Sons, Inc., Morrison-Knudsen Co., Inc., Peter Kiewit Co. and Utah Construction Co., last week won a $25,972,033 dam contract by a scant $26,187. And they did it on an alternate calling for natural cement in the concrete mix.

The job is Long Sault Dam on the St. Lawrence River for the Power Authority of the State of New York. Long Sault, the pool regulation dam in the $600-million International Rapids project, is no small construction job, but at least some of the eight bidders saw it as the way to get on the site for bidding later this year on the bigger plum, Barnhart Island power plant, $121.5 million worth on the U. S. side.

In taking the Long Sault contract, the combine of Walsh, Perini, M-K, Kiewit and Utah nosed out St. Lawrence Contractors, joint venturers who submitted $25,998,220 as their gross bid and chose not to submit a different price on the alternate—roughly one bag of natural cement to four bags of portland. The successful bidder's gross bid was $26,018,923.

St. Lawrence Contractors' unwillingness to give a credit on concrete using the cheaper natural cement of the alternate brought about the near miss for joint-venturers Henry J. Kaiser Co., Raymond Concrete Pile Co., Brown & Root, Inc., Mannix Ltd., Pacific Bridge & Co., General Construction Co., Shea & Co., Corbetta Construction Co., and Miron & Freres.

With eight bidders in all, bids ranged to $34,311,105; alternate $34,363,205.

Calling for natural cement in the concrete mix is a standard practice in New York State work; the Public Works Department has specified one bag of natural to five bags of portland on highway work.

The State Power Authority's decision to insert the alternate was not based primarily on price; rather it was an attempt to speed up the job. It was reasoned that natural cement with its low heat of hydration would permit a faster concreting schedule on Long Sault Dam. Being revenue-bond financed, there is all the urgency of toll-road construction in getting power production at Barnhart Island by 1958; the entire construction schedule is accelerated and tight.

The cement item in the bidding called for 540,000 bbl of portland cement, on which the low bidder listed $4.35 per bbl, the No. 2 bidder listed $4.30 per bbl. Under the alternate, the low bidder listed $4.35 per bbl for 435,000 bbl of portland and $3.90 for natural cement. The No. 2 bidder stuck to his $4.30 per bbl for the alternate. And therein lies the tale.

ENR will carry complete unit prices on the Long Sault Dam in an early issue.

Seaway Corp. Asks Bids For Excavation Contract

The St. Lawrence Seaway Development Corp. has invited bids on the fourth Seaway contract. The Buffalo District, Corps of Engineers, will open the bids on or about May 3.

The contract calls for excavation and construction of dikes in the 6-mi central section of the Long Sault Canal, near Massena, N. Y. Excavation amounts to 12 million cu yd of which 3 million cu yd will go into 30,000 linear ft of dikes along with 100,000 cu yd of stone riprap.

Plans and specifications are available from the Buffalo District Office, Corps of Engineers, at Niagara and Bridge Streets in Buffalo. Col. Loren W. Olmstead is District Engineer.

The Dutcher Construction Corp. of Queenstown, Md., was apparent low bidder for excavation of the Grasse River lock. Its bid of $2.2 million was more than $50,000 over the government estimate but still was within the 15% limit necessary to be acceptable.

News Briefs . . .

Gulf Causeway

The Mississippi Legislature has passed a bill authorizing the city of Biloxi to build a causeway connecting Deer Island to the mainland. The measure restricts the length of the causeway to two leagues, a little over six miles. The project will be financed by bonds to be paid off from tolls.

Building Authority

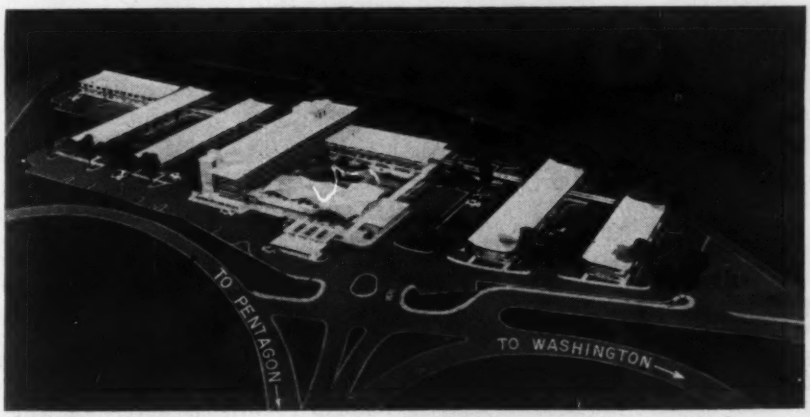
The Washington Legislature has approved a bill creating a state building authority to finance construction of schools and other public buildings. The authority also will be authorized to finance a $12 million building program at state institutions and colleges.

Ferry Study

The New Jersey Highway Authority has authorized a study of a ferry service across Delaware Bay that would link the authority's Garden State Parkway with the coastal route to Florida.

Traffic Survey

De Leuw, Cather & Co. will start traffic studies next week on a proposed South Louisiana Turnpike, running 86 mi from a point near New Orleans to U. S. Highway 90 at Lafayette, La. An engineering surveys of the proposed $100-million project is already underway (ENR March 17, p. 17).



Motel Goes up Near Nation's Capital

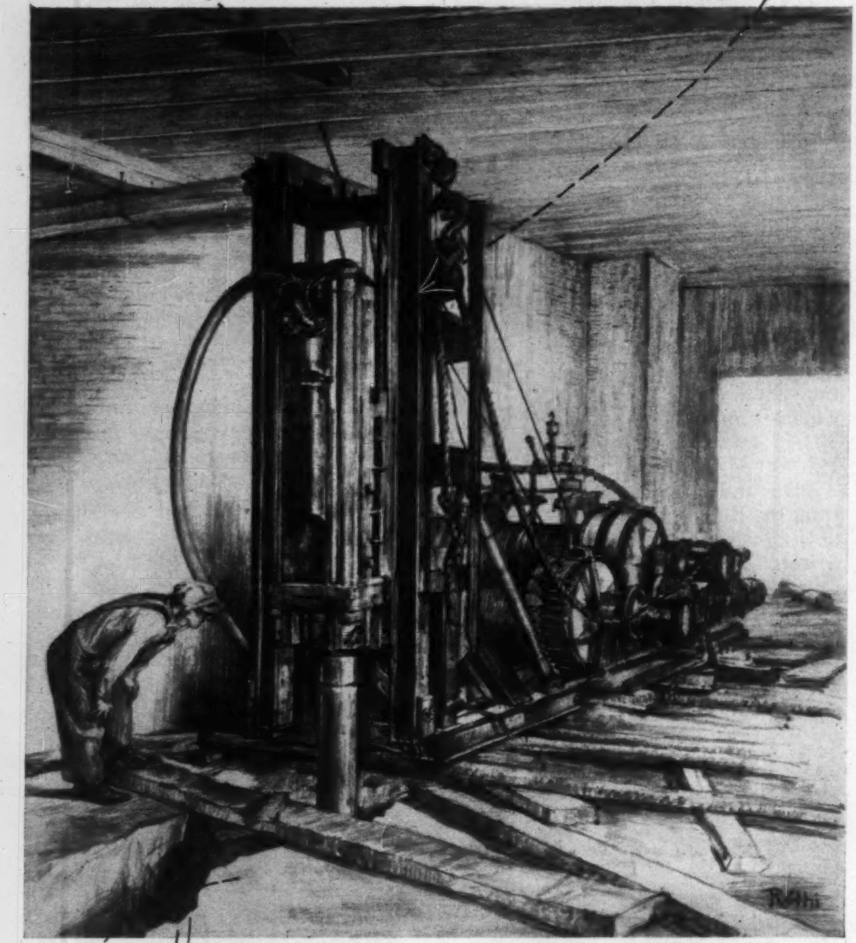
Construction began April 1 on a $4-million motel on the Potomac River in Arlington County, Va., within 10 minutes driving distance of the central part of Washington, D. C.

Plans call for 348 room units, parking space for 450 automobiles, restaurant, swimming pool and a wading pool for children. Builder claims it will be the world's largest drive-in motel.

The structure will have a pile foundation since it is being built on bottom land along the river. It will be a cast-in-place concrete, wall-bearing design. About 60% of the exterior wall area will be glass, and the building will be acoustically protected against noise from nearby Washington National Airport.

The builder is the restaurant chain, Hot Shoppes, Inc. Architects are Joseph G. Morgan and Edwin Weihe. Contractor is Charles H. Tompkins, Washington.

ANOTHER PROBLEM SOLVED BY SPENCER, WHITE & PRENTIS


Indoor Rig is of our design
Leads tilt back without removing hammer
Hammer can be hoisted above leads
RAhi

Project: Sealand Terminal,
Stein-Davies Corp., Brooklyn, N. Y.

SPECIAL RIG DRIVES PILES INSIDE A BUILDING

Even though headroom was only 16 ft., this special rig made it no great problem to drive the necessary pipe piles to bedrock. (This rig has driven such piles, in sections, to depths as great as 90 ft.)

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TVA Financing

Board suggests schemes for financing expansion by private investment

The Tennessee Valley Authority has come up with several ideas for financing expansion by going to the private money market.

The three-man TVA board this week suggested to the Bureau of the Budget that it be permitted to get money for new power facilities through issuance of revenue bonds or notes, or through lease-purchase contracts. Its recommendations are the result of a study made at the direction of the President, who has been openly in favor of getting TVA out from under government subsidy.

It was suggested that TVA be authorized to issue bonds, notes or other obligations secured by power revenues alone, without the backing of the Treasury or any other federal guarantee. Interest would not be exempt from federal taxes. Bonds would be sold to private investors by competitive bidding in a few cases. But, in view of the amounts needed, the board agreed most would be sold to a few large syndicates on a negotiated basis.

Since new financing measures would be supplementary to and not to substitute for present sources of capital (appropriations and revenues from power operations), it was contended that TVA appropriations should continue.

Payment at the average cost of money on the Treasury's marketable obligations would be required on net appropriations made for power purposes. TVA now has to repay funds appropriated for power within 40 years. Instead of this, under the new proposal, it would be required either to re-invest from revenues at least the equivalent of depreciation accruals, or reduce its capital obligations.

Another suggestion is that TVA enter into power purchase, lease, or lease-purchase arrangements with agencies in the valley region. Capacity of plants built under such contracts would be made available to TVA, whether built by the local agencies, or by TVA for their account. Facilities thus built would be regarded as power property held by TVA in computing payments in lieu of taxes to the states.

In this connection, it was suggested that TVA charge rates adequate to cover its operating expenses, statutory payments to states and counties in lieu of taxes, debt service on bonds, payment of a return to the Treasury, and such margin as may be desirable to TVA consistent with maintenance of the lowest practicable rates.

On jobs like famed Parklabrea housing project, users report...

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SMOOTH, densified fused resin-fiber surfaces assure finest architectural concrete—flawless and even textured, with no trace of grain pattern, knots or repair plugs. PlyGlaze cuts finishing time and costs. Eliminates expensive plastering. Ceilings and walls can be painted direct after a minimum of finishing. For details see Sweet's Architectural File or write:

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Hard, glossy-smooth wear resistant fused resin-fiber surfaces.

Top-quality Exterior plywood (EXT-DFPA). Standard panel sizes.

CITY BY CITY

Giant Garage-Heliport

Houston, Texas—Construction of the largest public parking garage in the South is scheduled to start this month in downtown Houston.

The $3-million project, designed to cover an entire block, will feature a heliport on top.

Seven parking levels—two underground and five above ground—will accommodate 2,500 cars daily. Heliport landing and takeoff facilities will be located above the top auto parking level. The street level will provide sites for seven stores.

Underground pedestrian concourses will connect the garage to the Commerce Building, located across the street, and to the new Second National Bank Building, now under construction in the block north of the garage site.

Contract for the project has been awarded to Manhattan Construction Co. of Texas. Ten Ten Travis Corp., a subsidiary of Tennessee Gas Transmission Co., has been formed to build and operate the garage.

4,000-Apartment Community

New York City—Park City, $50-million apartment community—one of the largest privately sponsored rental apartment developments ever undertaken—is going up on a 45-acre tract in Forest Hills, Queens.

Construction already is under way on the first section of the project, a group of six 14-story buildings containing some 1,200 units scheduled to be ready for occupancy this summer. When fully completed, the project will be a 4,000-apartment community for middle-income families (monthly rentals: about $30 per room).

Of reinforced concrete flat-slab construction, the buildings will have private outdoor terraces for every apartment. In addition, there will be cross and through ventilation in each unit, and protected outside "skyline" corridors on every floor from which each suite gains access.

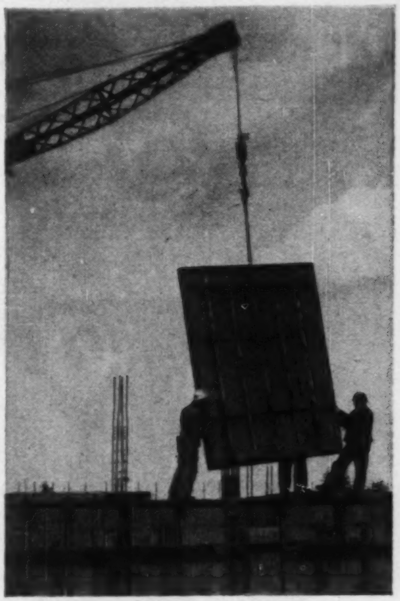
Carol Management Corp. of New York City is the owner-builder. Philip Birnbaum is the architect.

New Use for Radar

Seattle—The first radar installation of its kind is being used to control the flow of traffic at a busy Seattle intersection.

Each traffic movement at the intersection is controlled by individual

(*City by City continued on page 32*)



50 to 75 is a good average, but with care you can get up to...

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PLYGLAZE'S tough, hard surface stands up indefinitely under repeated concrete pourings. PlyGlaze forms are worn out only when the panels are cut into unserviceably small pieces. With proper design and care you should get 50 to 75 re-uses. Actually, *over* 200 have been obtained—even then PlyGlaze continues to form good-looking concrete.

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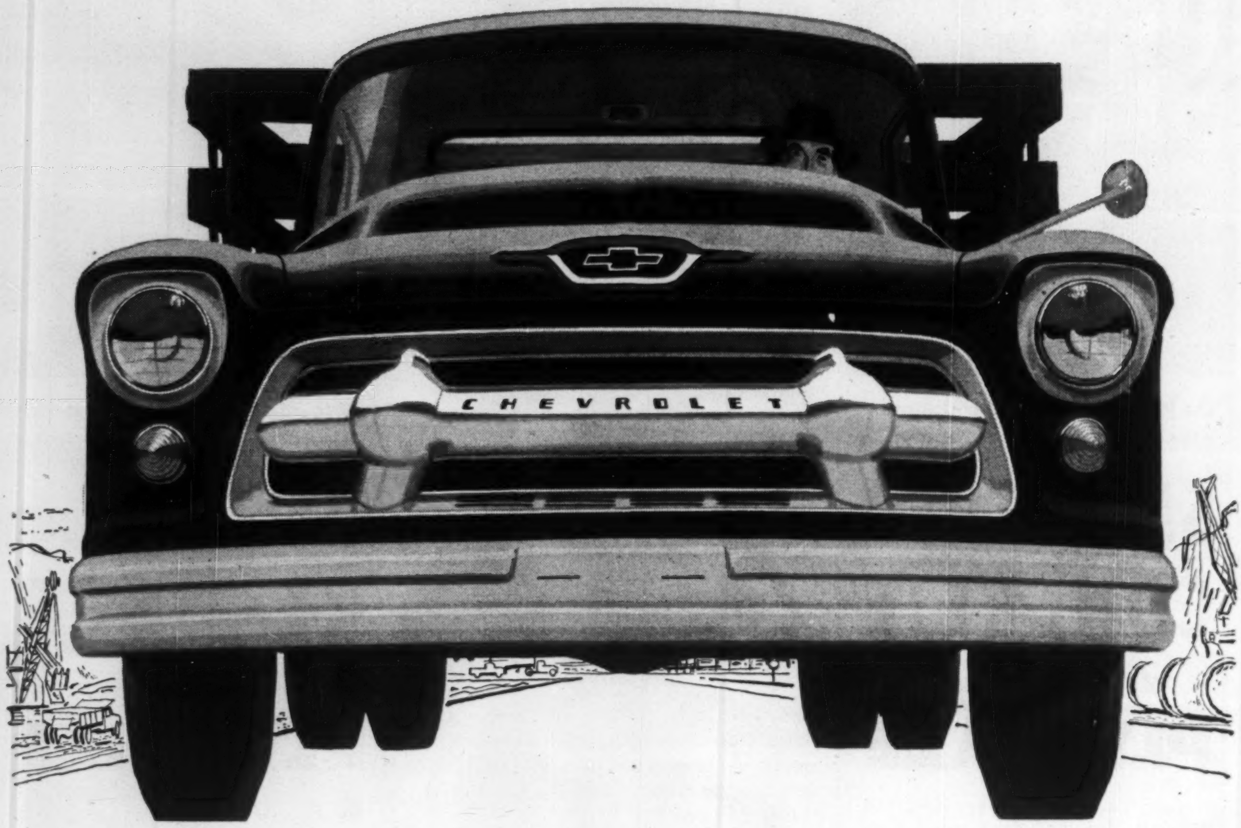


New models . . . more models . . . higher G.V.W. Designed and built the way you can count on Chevrolet, the leader, to build them. Ready to do more jobs. Do 'em faster. Do 'em better. And do 'em with new economy.

Dressed for a new bonus

For the first time in any truck line, *two* distinctly different styling treatments are offered by Chevrolet. One in light and medium models, another in heavy-duty. Each is a new, profitable advertisement-on-wheels for you and your business.

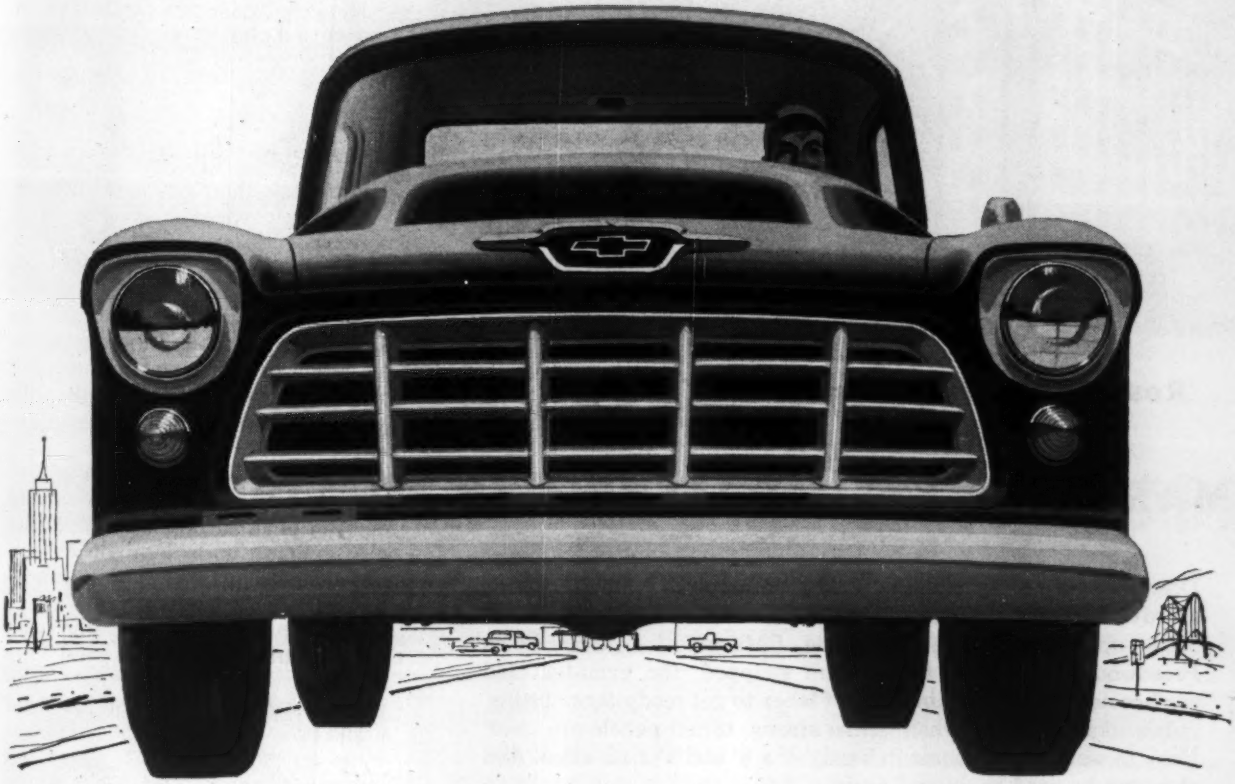
Measured for a new savings

Makes a whale of a difference to get a truck that fits the job. And in Chevrolet you get it! With 75 different models, all having the industry-standard 34-inch frame width . . . 15 wheelbases, ranging to 220 inches . . . three different chassis types, conventional, forward control, low cab forward . . . and with maximum G.V.W.'s upped to 18,000 lbs.—Chevrolet's new line of Task-Force Trucks offer the *exact* truck to do the job you

THEY'RE HERE! NEW CHEVROLET

Task·Force TRUCKS

CHEVROLET



need done . . . with operating costs lower than ever!

There's new Overdrive for even bigger gas savings on ½-ton models . . . proved truck Hydra-Matic on ½-, ¾- and 1-ton models—each optional at extra cost. And now, as standard equipment, Power Brakes are featured on 2-ton models (optional on all others) and Tubeless Tires are standard on ½-ton models.

Powered for economy

Whether you deliver door-to-door or haul state-to-state, Chevrolet's *six* new "high-voltage" engines offer the right power-combination for dependable, economical performance on every job. All are of efficient valve-in-head design with high compression ratios. All feature the surer kick-off and bigger generator capacity that only Chevrolet's new 12-volt electrical system delivers.

Chevrolet's new "under-the-hood" features are almost endless. Engine mountings are completely redesigned, cooling and lubricating systems made more efficient, fuel system improved . . . on and on they go, setting a new pattern for the truck industry.

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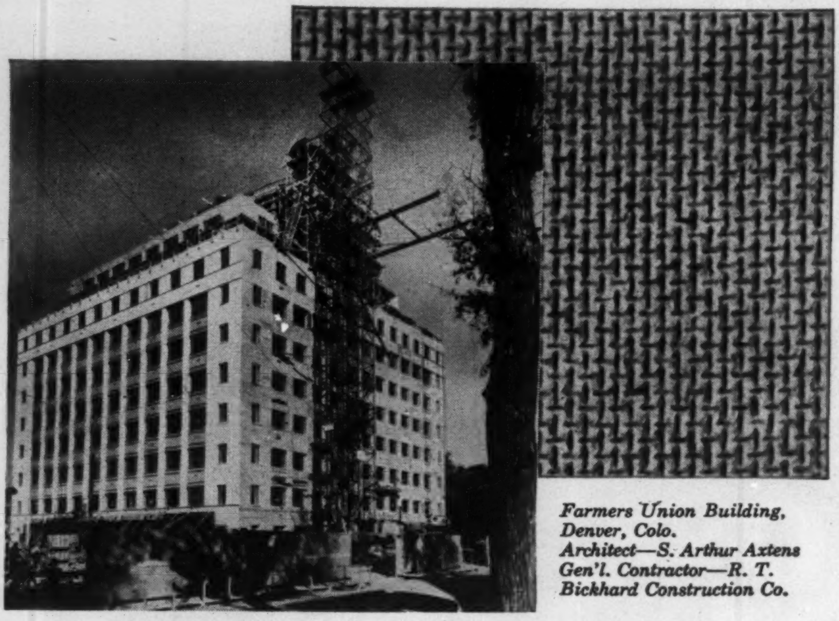
So revolutionary are the many new and profitable features advanced by Chevrolet's new Task-Force that truck users everywhere should see their Chevrolet dealer today. Learn the complete story and get started on your way to better trucking. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

Task·Force TRUCKS

CHEVROLET



Farmers Union Building,
Denver, Colo.
Architect—S. Arthur Axtens
Gen'l. Contractor—R. T.
Bickhard Construction Co.

Results like this from screen side of . . .

MASONITE *Concrete Form* **PRESDWOOD**

Described as one of America's first "atomproof" buildings this sturdy, ten-story structure's handsome exterior was made of concrete poured against the screen side of Masonite® Concrete Form Presdwood. When the forms were stripped, the even-textured surface needed only a minimum of labor to get ready for painting.

It's like that everywhere these strong, tough panels are used. Easy to work with...come in handy 4' x 8' and 4' x 12' sizes. And they can be used again and again.

Cut Costs 3 Ways!

1. Screen side to concrete—for unpainted surfaces. Tiny projections left in concrete cut hand-rubbing costs up to 50%.
2. Smooth side to concrete—for painted or unpainted surfaces. Rubbing virtually eliminated. No knots, grain or blemishes in Presdwood to mar the finished surface.
3. Screen side to concrete—for painted surfaces. The textured surface left in the concrete forms an excellent bond for paint. Only minimum rubbing required.

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Firm...
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"Masonite" signifies that Masonite Corporation is the source of the product

radar detector units mounted over the traffic lanes. As vehicles move into the area under the units, microwaves are reflected back from the vehicle to the detector. The reflected beam then registers a vehicle movement that is transmitted to the "brain" in the traffic-signal controller.

The mechanism allocates periods of time for red and green signals, based on the volume of traffic detected by the radar.

Traffic Time-Saver

Pittsburgh—This city is considering a new idea for speeding up mass transit movement through its Golden Triangle area.

The plan, which reportedly would provide time savings of from 23% to 35% during peak rush hours, calls for separation of transit and private vehicles on 10 key downtown streets, with transit vehicles gaining the right-of-way.

Pittsburgh Railways Co., largest of the city's mass transit agencies and operator of all streetcars, proposed the plan as drawn up by Simpson & Curtin, a Philadelphia consulting firm of transportation engineers.

On the one-way streets the plan would restrict the two right-hand lanes to transit vehicles only. Private vehicles would take the left-hand lanes and would be prohibited from making right turns across transit areas. On wider one-way streets, transit vehicles would be given exclusive right to the center lanes, leaving lanes on either side to cars and trucks.

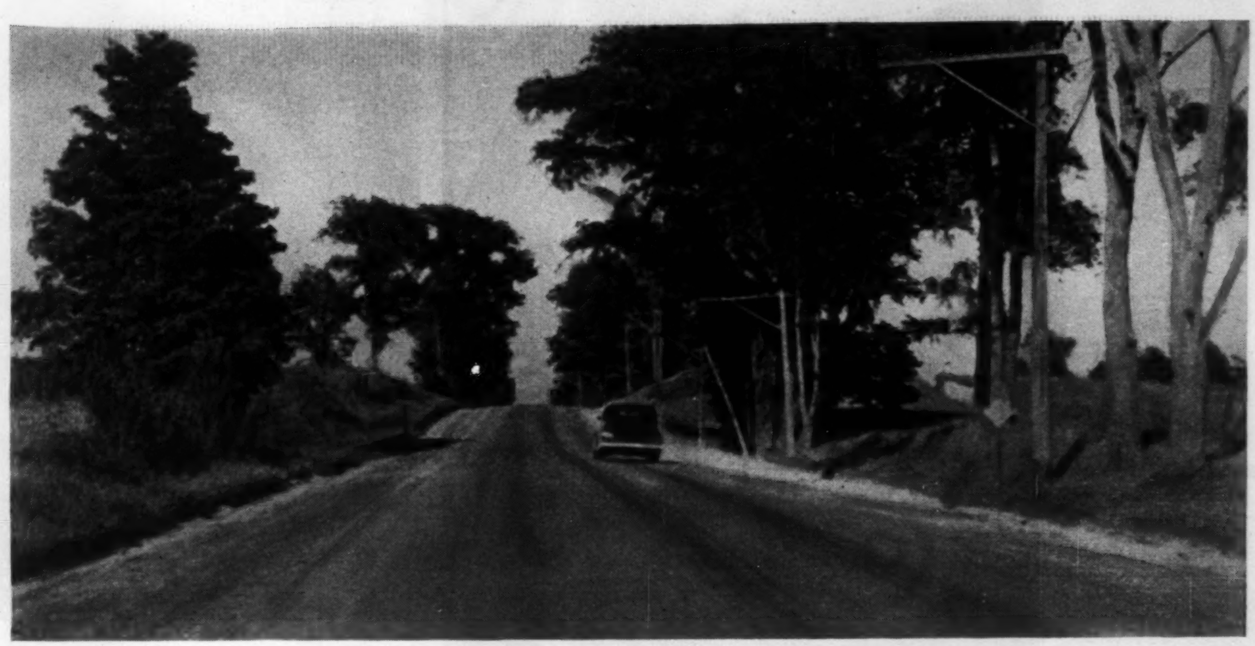
Currently before the state legislature is a bill to create an Allegheny County Mass Transit Authority. This agency would have broad powers to purchase and operate most mass transit facilities, build subways and off-street parking facilities as well as monorails, power plants and terminals. It would also set the rates for use of its facilities.

Slum Clearance Start

Cincinnati—Cincinnati has cracked the ice in its property acquisition program for the $8.5-million West End slum clearance project. A contract to purchase the first 600 parcels on Lincoln Park Drive has been agreed to.

The city's time schedule calls for acquisition of 170 parcels in the next quarter under a budget of $1.6 million, and for demolition of about a fourth of this property in the same period.

It is estimated that the entire purchase program will require 18 months for completion.

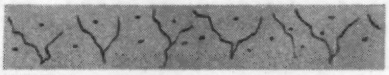


3 BASIC REASONS WHY

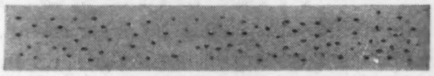
STERLING ROCK SALT STABILIZED ROADS

Wear Better, Longer . . . with Less Maintenance!

1. Greater Compaction Means Greater Density!

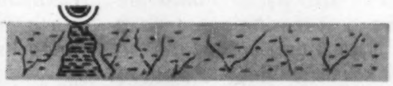


NOT THIS . . . Without salt, ingredients of the mix remain "loose." Clay binder cannot repel moisture. Excess rain makes rivulets. Dried out, they leave weakening crevices.

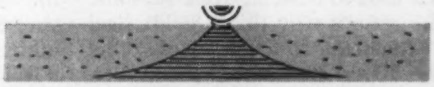


BUT THIS . . . With salt, you get better compaction. Brine film is thinner than water, allowing tighter bond of the whole mix. Clay, with brine, repels excess rain at surface. No rivulets. No weakening crevices.

2. Greater Load Transference Means Longer Road Life!

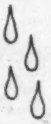


NOT THIS . . . Unsalted road. Wheel of loaded truck puts a great weight on one point of surface. Roadbed supports load **vertically** . . . by only the structure directly beneath it.



BUT THIS . . . Salted road. Because of greater compaction, same load is diffused **horizontally.** Strain is spread outward and downward to about 40 inches at base to each surface inch.

3. All-Weather Resistance Means Lower Maintenance Costs!



EXCESS MOISTURE. Binding materials are not washed out. Clay, with brine, forms colloidal jelly. Repels excess rain, keeps it from weakening structural strength of mix.

EXCESS DRYNESS. Salt recrystallizes. Fills voids. Holds clay binder. Forms protective shield which retains some moisture in mix, resisting suction-like action of traffic.

FREEZING. Salt lowers freezing point. Frost does not penetrate. Prevention of below-surface freezing helps eliminate spring "heave" and pot-holing.

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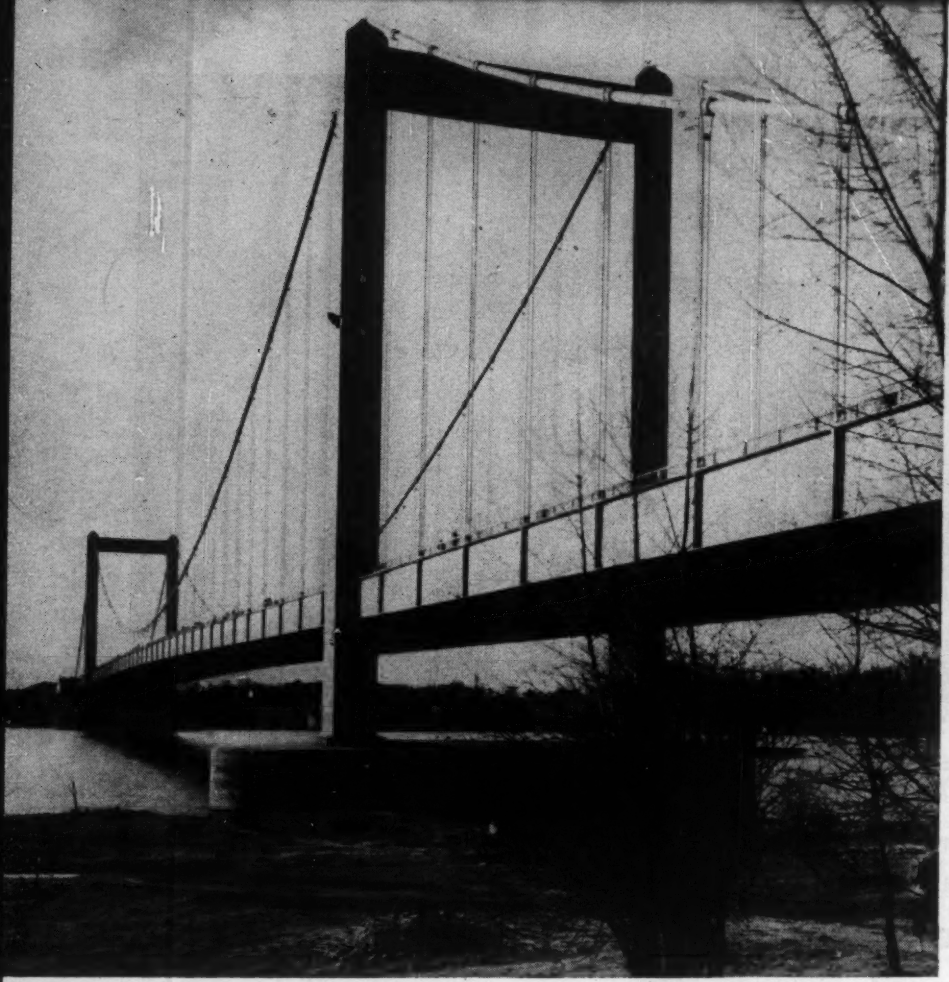


Rhine suspension span, Europe's longest, is a product of many special construction techniques that were combined ingeniously to make it . . .

The Bridge That Was Built Like a Watch

Europe's longest suspension bridge is sometimes referred to as a "watchmaker's bridge" because of the finesse and complexity of structural techniques used to build it. Here are some of the reasons why this 1,860-ft steel and concrete structure across the Rhine River at Rodenkirchen, Germany, is truly unique:

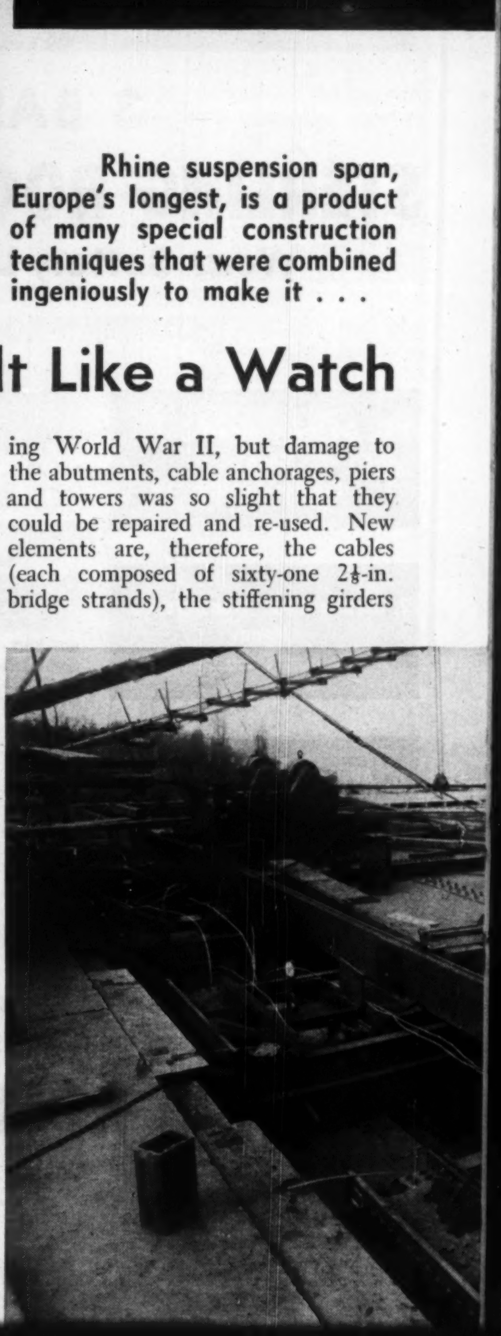
- A suspension bridge with a prestress "constructed" into the steel stiffening girders is unusual enough in itself; but even more important is the fact that its concrete roadway is an integral part of a composite concrete and structural steel floor system. A load placed on any part of the bridge deck produces its resultant stresses in every part of the floor system.

The 7½-in. concrete roadway, fixed throughout by shear connectors to the floor system's stringers, extends the full width and breadth of the bridge (1,860 x 82 ft) without a single joint. This innovation represents the first application of a composite floor system—prestressed steel and concrete working together—for a suspension bridge.

- Tensile and compressive stresses alternately induced in the steel stringers and girders by hydraulic jacks prevented cracking in the concrete roadway for the full year period covering curing, shrinkage and plastic flow of the slab. The slab itself is both prestressed (by post-tensioning) and reinforced.
- The composite floor system is connected to the stiffening girders by elastic shear bracing. In this way the floor system is really a part of the stiffening girders and increases their stiffness considerably. The elastic shear bracing is used instead of a direct rigid shear connection, since this latter type would have transmitted too much shear from the girders and stressed the floor system excessively. (The concrete roadway slab cantilevers, from the outside stringer, out over the elastic shear bracing, thus does not connect directly with the girder. See drawing.)

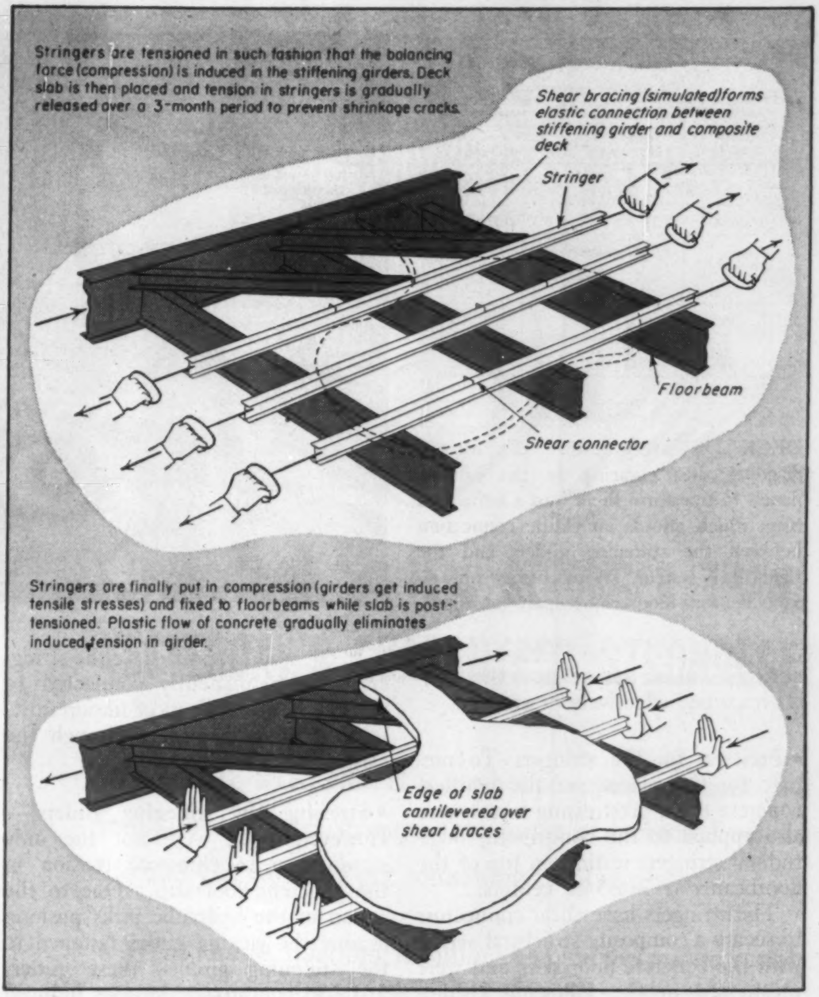
All these design features reduced the dead load of the total floor system to two-thirds of that of a structure of the same size that it replaced.

- **New on old**—Main span of the new bridge is 1,240 ft long, and the side spans are 310 ft each. The old bridge completed in 1941, was destroyed during World War II, but damage to the abutments, cable anchorages, piers and towers was so slight that they could be repaired and re-used. New elements are, therefore, the cables (each composed of sixty-one 2⅛-in. bridge strands), the stiffening girders



and the deck. Officially opened to traffic in December 1954, the bridge deck carries two roadways, each 28 ft 6 in. wide, a 7-ft 4-in. wide center strip for cyclists and two sidewalks each 8 ft wide.

Steelwork on the bridge is actually quite heavy, since specifications called for a design load of one 132,000-lb vehicle (a military tank) plus 100 psf on one lane of both roadways and 60 psf on the remaining area of the bridge deck. The two stiffening plate girders, 10 ft 10 in. deep, on either side of the bridge, are of welded construction, as are the floorbeams and other shop-constructed members. In the field all steel connections were riveted, as were most temporary members fabricated to aid in construction.



Stringers are tensioned in such fashion that the balancing force (compression) is induced in the stiffening girders. Deck slab is then placed and tension in stringers is gradually released over a 3-month period to prevent shrinkage cracks.

Stringers are finally put in compression (girders get induced tensile stresses) and fixed to floorbeams while slab is post-tensioned. Plastic flow of concrete gradually eliminates induced tension in girder.

Shear bracing (simulated) forms elastic connection between stiffening girder and composite deck
Stringer
Floorbeam
Shear connector
Edge of slab cantilevered over shear braces

ROADWAY CONSTRUCTION in four steps: (1) tension stringers and place slab, (2) release tension gradually, 3-mo period, (3) compress stringers, post-tension slab and fasten stringers to floorbeams, (4) plastic flow of concrete takes tension out of girders.

• Prestress by profile—The two main stiffening girders were prestressed by designing and fabricating the members with a profile other than that of the final girder line. In this manner stresses were induced opposite to those that would otherwise have been found in girders that are part of a composite floor framing system.

Actually, the effective top flange of the stiffening girders is the whole roadway structure, and such a flange would have made an unbalanced girder section unless the prestress by profile were added to compensate. The result of this prestress—and all the other techniques used in the bridge—is to equalize maximum positive and negative moments in the girders.

TENSIONING STEEL STRINGERS in pairs by hydraulic jacking against a temporary girder laid flat and attached at its ends to the stiffening girders which, as a consequence, are initially put into compression. In background, note deck forms already in place and shear connectors on stringers.

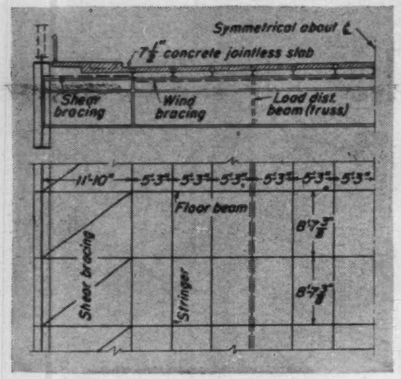
Moments in the floor framing system occurring at the towers are of the same magnitude as those at mid-span.

By temporarily using higher stresses in the hangers close to the towers, the sag of the girders during erection could be controlled within limits not dangerous to the shop and field joints.

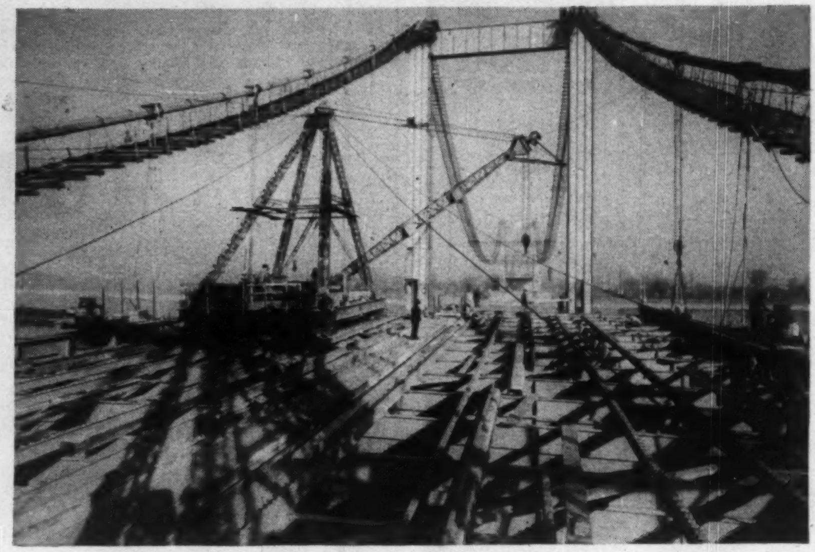
Because of the unequal forces in the hangers and initial stresses in the stiffening girders, the cables were pulled out of parabolic line, the deviation at the quarter points of the span being in the order of 8 in.

To close the final girder joint at the center of the span (the built-in profile prevented an easy closure) additional weights had to be applied temporarily at this point in the bridge. Although resort to some such weighting (sometimes consisting of the traveler used for erection) is frequent in suspension bridge work, the final closure of the Rhine bridge girders needed even more weight than previously had been used on the other field joints.

Upon completion of the operation



DECK DETAILS feature the use of diagonal shear bracing in the outside panels to transform them into a horizontal truss which affords an elastic connection between the stiffening girders and the rigid deck system. Wind braces run diagonally four floorbeams apart (at right).



and removal of the weights, the girders remained effectively prestressed.

• Prestress for the stringers—To prepare for the placing of the jointless concrete deck, prestressing forces were also applied to the continuous longitudinal stringers resting on top of the floorbeams at 5-ft 3-in. centers.

The stringers have shear connectors to secure a composite structural action with the concrete floor slab, and were prestressed in the following fashion when forms for deck were in place:

A heavy plate girder, fabricated for the purpose, was placed flat at either end of the bridge (see picture) and fastened to the two main stiffening girders to provide a fixed temporary jacking reaction. Other special members, made up of reinforced channel sections, were then fastened to each pair of stringers, top and bottom, to take the jacking thrust. Hydraulic jacks, set between the girder and these members could thus tension the stringers, which, being as yet unconnected to the floorbeams, were free to slide in a longitudinal direction.

Once a predetermined amount of the tension had been induced in the stringers, the concrete deck was placed. Then a few days after the concrete deck had hardened, the tension in the stringers was slowly reduced to eliminate the influence of shrinkage by putting the first initial compressive stress in the concrete. Finally, after about three months, when the shrinkage and part of the plastic flow of the concrete were terminated, the stringers were subjected to compression by rearranging the jacking set up—placing the jacks ahead of the fixed jacking girder instead of behind it as for tensioning.

In their compressed state the stringers were permanently connected to the floorbeams and, most importantly, to the stiffening girders through the elastic shear bracing.

• Stressing the stiffening girders — However, these were not the only steps taken to eliminate tension in the concrete floor slab. Due to the action of the hydraulic jacks pushing against the jacking girder fastened to the stiffening girders, these girders first had compressive stresses induced in them. But when the stringers were compressed the girders were subjected to tensile stresses. This tension in the girders, which disappeared under the action of plastic flow of the concrete road deck, assured that the concrete would be subject to no tensile stress at all when the bridge was ready for service. In the final state, only bending moments cause stresses in the girders.

In addition to this particular action on the concrete deck, 1 in. dia steel rods (strength 85,000 to 128,000 psi), placed longitudinally and transversely in the road deck, were tensioned and anchored at ends of slab to eliminate any tendency to crack.

• Reduced negative moments—Negative moments in the continuous stringers were reduced by placing floorbeams rather closely together, designing them as relatively flexible members and providing two longitudinal live load distribution trusses at third points of the transverse cross section of the deck. Thus the long, wide and jointless slab could be kept free of tensile stresses and of cracks.

German highway authorities claim that the prestressed, composite steel and concrete floor system made possible a saving of $1.5 million. The total cost of the work—reconstruction of existing facilities and construction of the new parts—was $4.1 million. The steel saving, in comparison with the original bridge which required 12,400 tons, was 4,400 tons.

• A host of tests—The rather complicated design, erection and prestressing procedure required careful stress and deformation analysis and other tests. Aerodynamic tests on a model of the bridge section were carried out in a wind tunnel. Fatigue testing—to six million cycles—was done on the cable ropes, with the lateral compression of the hanger grip imposed on the test specimens. Tests for the fatigue of the reinforced concrete slabs prestressed in two directions and subjected to bending moments were carried out, as were tests on analogous composite beams for shear and bending moment.

The bridge was designed by H. Homberg, consulting engineer of Hagen. W. Klingenberg is bridge engineer of the highway department of the Federal Ministry of Transport. The contract was let on December 5, 1951 to the firm of August Kloenne, Dortmund. Dortmunder Union of Dortmund, and M.A.N., of Gustavsburg, participated in the steel work as subcontractors. Polenski & Zoellner, Cologne, did considerable construction work on the piers. The prestressed concrete deck was constructed by Dyckerhoff & Widmann, Munich.

The information contained in this article comes from the McGraw-Hill World News Bureau in Germany; August Komendant, consulting engineer, New York and Carl H. Gronquist of the consulting firm of D. B. Steinman, New York.

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COMPACTION of crushed sandstone subbase and base was done by 100-ton pneumatic tire rollers in 6-in. lifts which tank truck sprinklers brought to optimum moisture.

ASPHALT pavement is laid on the central 8,000 ft section of runway. It was also

Time and cost schedules met on . . .

Windup to Airbase Building in Morocco

Vincent B. Smith
Washington News Bureau
Engineering News-Record

(*Mr. Smith has been on a tour of our airbases in Morocco, Libya and Arabia.*)

American airbase builders in French Morocco showed what they could do last year when they turned a raw, unfavorable site into a paved fighter field in 12 months.

Filling a rush order for the Air Force, the Army Engineers and Atlas Constructors—prime contractor for the Moroccan program—completed the runway taxiways and aprons of the Boulhaut Air Force base before the construction directive was one-year-old.

Resourceful engineering and hard-hitting construction management have pushed the project through on schedule, within pre-determined cost limits. The base will become operational April 15.

Auxiliary facilities of the $23-million initial program for Boulhaut are practically complete.

Essential paved areas for aircraft use —the runway, taxiways and aprons— took top priority in the construction program. Those areas were completed and ready for operation four months ago.

Boulhaut is the fourth and final base to be built in French Morocco, rounding out a revised program that began four years ago—during the Korean emergency—with five bases in mind (ENR Aug. 27, 1953, p. 30).

• **Unattractive site**—A fighter base near the village of Boulhaut, 25 miles east of Casablanca, had been part of the Moroccan program from the start. Preliminary plans were made in 1951 for the present site—the only land the French were willing to assign to the base.

Many factors made the site unattractive to base builders. The soil was a heterogeneous hodge-podge of variable clays that changed from hard lump to a sticky, unmanageable mass under the first rainfall. Water supply was another problem. The few local wells that had been dug in the area yielded only a meager amount of highly saline water.

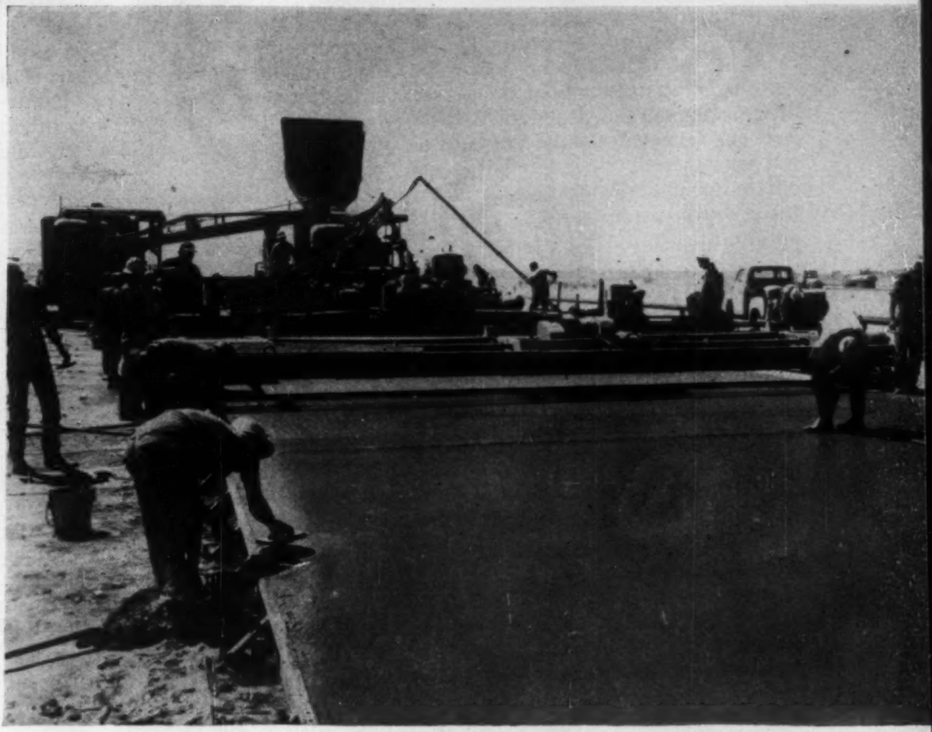
The Corps of Engineers and the contractor, however, found that some benefits had accrued from the delays the project encountered from the time the base was laid out on paper in 1951 until the order to build on the site finally came through on Dec. 15, 1953.

During the two-year interval, an Air Force weather station on the site had collected supplementary wind data that permitted reorienting the 10,000-ft runway to a new alignment on better terrain.

• **Raising runway grade helps**—On this improved location, Corps of Engineers designers made a further gain by raising the runway grade 1.7 ft. In combination with a maximum allowable longitudinal slope of 1%, the changes saved nearly 750,000 cu yd of earthmoving, reduced the quantity of excavation to about 1,200,000 cu yd. Maximum cut, at the south end of the runway, was about 8 ft; maximum fill, at the north end, about 10 ft. Money savings brought about by the changes amounted to $630,000.

Toughest item on the schedule was completion within 12 months of the 10,000-ft runway and parallel taxiway, plus some 30 acres of aprons and cross taxiways. In addition to excavation, construction for these paved areas required careful, time-consuming construction of 300,000 cu yd of compacted earth embankment and nearly 170,000 cu yd of crushed rock base and sub-base, placed and compacted in 6-in lifts. Two types of pavement to be laid on base course called for more than 178,000 sq yd of portland

used on the 10,000 ft parallel taxiway, in both cases at rates up to 1,600 tons per day.



CONCRETE pavement is used for 1,000 ft sections at either end of runway and for aprons. Two dual-drum mixers placed over 51,000 cu yd between June 11 and Aug. 31.

cement concrete and nearly 215,000 sq yd of asphaltic concrete.

Soil and weather conditions shortened the actual working period to seven months. The annual rainy season, from November to April, turned the clay soils at Boulhaut into a quagmire. Earthmoving equipment could not operate during this period and had to wait until April 20 to start heavy grading.

Well in advance of dry weather, the base builders took steps to forestall possible delays due to water shortage. N. D. (Dan) Teters, general manager of Atlas Constructors, had his forces dam one of the largest rain-catching depressions on the site to store a reserve supply of 23,000,000 gal that kept the job going until local wells could be brought in.

- **Compaction control**—At the same time, the area engineer at Boulhaut, Maj. James M. Gale, and his assistant, Sumner Stewart-Magee organized a materials staff to tackle the problem of compaction control for the tricky soils that would have to be placed in embankment. The materials group wanted a fast method of field control, sufficiently accurate to assure specified compaction without holding up construction progress.

Soils investigations showed existing general conditions to be about like this: on the surface, an average of 12 in. of gray silty topsoil containing iron nodules and organic material; under this topsoil, a yellow silty clay, with nodules, to an average depth of 30 in. below the surface; from this layer to depths of 3 to 8 ft, three principal types of clay, one of which contained iron nodules in varied amounts. Below the clays, weathered shale and phyllites were generally encountered at depths of 6 to 15 ft.

Organic topsoil, of course, was stripped from all construction areas. Compacted embankment was built up of the clays and silty clays. Working on a close schedule, there was no time to stockpile the materials for selective use. Soils had to be moved directly from the cut at one end of the runway to the embankment at the other end.

Compaction control was the key to embankment construction. Soils engineers worked out a fast and simple system of moisture-compaction control by the field density method. Competent field crews backed up by an efficient project laboratory made the system work.

- **Oil used in density tests**—At the head of each field crew was a materials engineer who had become thoroughly familiar with the existing soils during the months of preliminary investigation. With him were two assistants and the necessary power wagons, equipment and helpers to perform complete moisture and density tests in the field.

Field density tests employed oil instead of sand to measure volume. Oil had advantages for the purpose. It was faster, free from weight changes caused by moisture variations, easier to handle, and less susceptible to human errors. In addition, oil revealed poor gradation of material much more readily than sand; this tell-tale faculty proving more useful in crusher-run aggregates for base and subbase than in compacted clay.

Compacted embankment was constructed in lifts of 6 to 8 in. Crew chiefs, on the basis of their experience, made a visual classification of incoming material upon delivery to the embankment. As the soil was placed, the field crews took representative samples and sent them immediately to the laboratory for analysis, while the contractor processed the material by aerating or adding moisture in accordance with directions of the field engineers.

The laboratory used a quick method of determining moisture-density control values for the guidance of the field crews. Natural soil conditions aided fast work by the laboratory. Materials were near optimum moisture when removed from borrow areas, and they generally passed the ¾-in. screen upon grading analysis. The laboratory, therefore, could perform rapidly a modified AASHO test consisting of one to three points (or moisture-density relationships). This information, along with the visual classification by the crew chief of the field, pretty well identified the soil for final check on a master moisture-density chart.

This procedure was continuous for each lift of material and variations within the lifts throughout the period of embankment construction. To the soils engineers, the method of control was not especially desirable, but it did obtain required compaction at moistures within a safe working range of optimum.

• **Pavement construction**—Boulhaut is the first base in French Morocco to use portland cement concrete pavement on the runway end sections, each 1,000 ft long, in addition to the two warmup aprons and a big operations, parking and refueling apron. Flexible pavement was placed on the 8,000-ft center section of the runway, 150 ft wide, and on the full 10,000-ft length of the parallel taxiway, 50 ft wide.

Pavement for the fighter base was the so-called light duty type, designed for 25,000-lb single-wheel load at 200 psi tire pressure. The pavement had to be built on subgrade of low bearing value, generally 3 CBR at 90% of modified AASHO density.

On this kind of subgrade, the flexible pavement required a substantial thickness of subbase and base. The original design called for up to 21 in. of crushed sandstone subbase, topped by a 6-in. base course of harder crushed rock supporting 3 in. of asphaltic concrete pavement.

This design had to be modified in order to complete the pavement on schedule. Production of base course rock by a subcontractor at a nearby quarry failed to measure up to expectations in either quality or quantity. Tests of the sandstone being placed in subbase meanwhile showed that this material met most of the requirements for base course aggregate.

The engineers, therefore, built a test section of base using sandstone. This section met the essential bearing requirement, producing field-soaked CBR in excess of the 80% specified at 100 modified AASHO density. Accordingly, sandstone was substituted for the somewhat harder material originally specified. As a safeguard, the thickness of asphalt pavement was increased from 3 to 4 in., with a compensating decrease in base course from 6 in. to 5 in.

Field crews controlled compaction of sandstone by the same moisture-density method used on embankment clay. They checked moisture contents carefully during processing of the material and just prior to rolling, because the sandstone was critical to moisture variations of 1½% above or below its 8.5% optimum. On the first and second lifts, eight to nine coverages of a 50-ton roller with 120-psi tire pressure generally produced required compaction to 95% of modified AASHO density. For subsequent lifts, the compaction requirement increased to 100%, and 100-ton rollers with 130-psi tire pressure did the compacting.

A 6-in. crushed sandstone base, compacted to 95% modified AASHO, was placed on subgrade for portland cement pavement. Thickness of the concrete pavement ranged from 10 to 12 in.

• **Work on unit price basis**—Construction moved ahead on a closely geared schedule. The compacted embankment and practically all excavation were completed by mid-July. Laying of crushed sandstone got under way May 13, and continued five months to October 19, with 167,000 cu yd of subbase and base placed in that time.

Enough 6-in. sandstone base was in place to start concrete paving June 11. By Aug. 31, two paving crews had completed all the concrete pavement in the aircraft utilization areas, totaling more than 51,000 cu yd.

Asphaltic concrete pavement had to wait longer for sufficient build-up of sandstone subbase and base. Asphalt paving began Aug. 30 and was completed Oct. 28. In that time the asphalt crews laid more than 45,000 tons of binder and surface course mix.

In a good 10-hour day, May 16, the contractor removed 24,550 cu yd of excavation and placed 10,860 cu yd in compacted embankment lifts.

Representative Unit Prices

Item	Unit	Price
Clearing and grubbing	Acre	$40.00
Stripping	Cu yd	.85
Excavation (unclassified)	Cu yd	.85
Overhaul	Sta.-yd	.015
Compacted embankment	Cu yd	.50
Concrete pavement, 10-in.	Cu yd	18.00
Cement(1)	Bbl	7.00
Select material subbase	Cu yd	5.50
Prime coat and tack coat	Gal	.49
Asphalt binder course(2)	Ton	11.00
Asphalt surface course(2)	Ton	11.50
Asphalt(1)	Ton	64.00
Sheepsfoot tamper	Roller-hr.	12.70
Tandem wheel roller(3)	Roller-hr.	7.75
Three-wheel roller(3)	Roller-hr.	7.75
50-ton pneum. tire roller(3)	Roller-hr.	14.00
100-ton pneum. tire roller(3)	Roller-hr.	15.90

(1) Mostly imported.

(2) Prices reflect plant setup costs for two quarry locations.

(3) Roller-hour charge applies only to operations other than asphalt paving. Rolling of asphalt pavement is included in unit prices for binder course and surface course.

The peak of sandstone subbase and base construction was about 12,000 cu yd in 10 hours. Two dual-drum pavers mixing 1⅓ cu yd batches placed more than 1,000 cu yd of concrete on a representative high-production day of 11 hours.

Asphaltic concrete was put down at rates exceeding 1,500 tons on good 12-hour days. The biggest day on runway paving was 1,600 tons in 14 hours, mixed by a 4,000-lb pugmill and placed by two spreader-finishers.

All this work was performed on a unit price basis such as would prevail on similar projects in the United States. The prices were negotiated and agreed to by the Corps of Engineers and the contractor before construction began. This method of pricing in advance gave both the engineers and the contractor a sound basis for cost estimating and cost control.

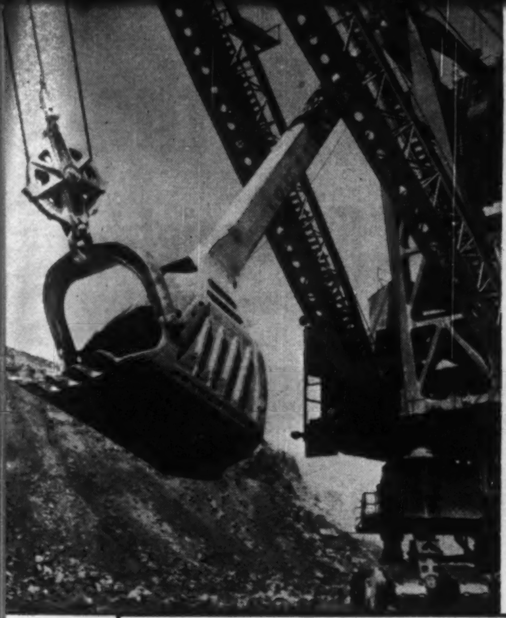
Costs of asphaltic concrete runway and taxiways, including sandstone subbase and base, was about $8.20 a sq yd. For portland cement concrete pavement in runway and aprons, the average cost, including 6-in. base, was about $10 per sq yd.

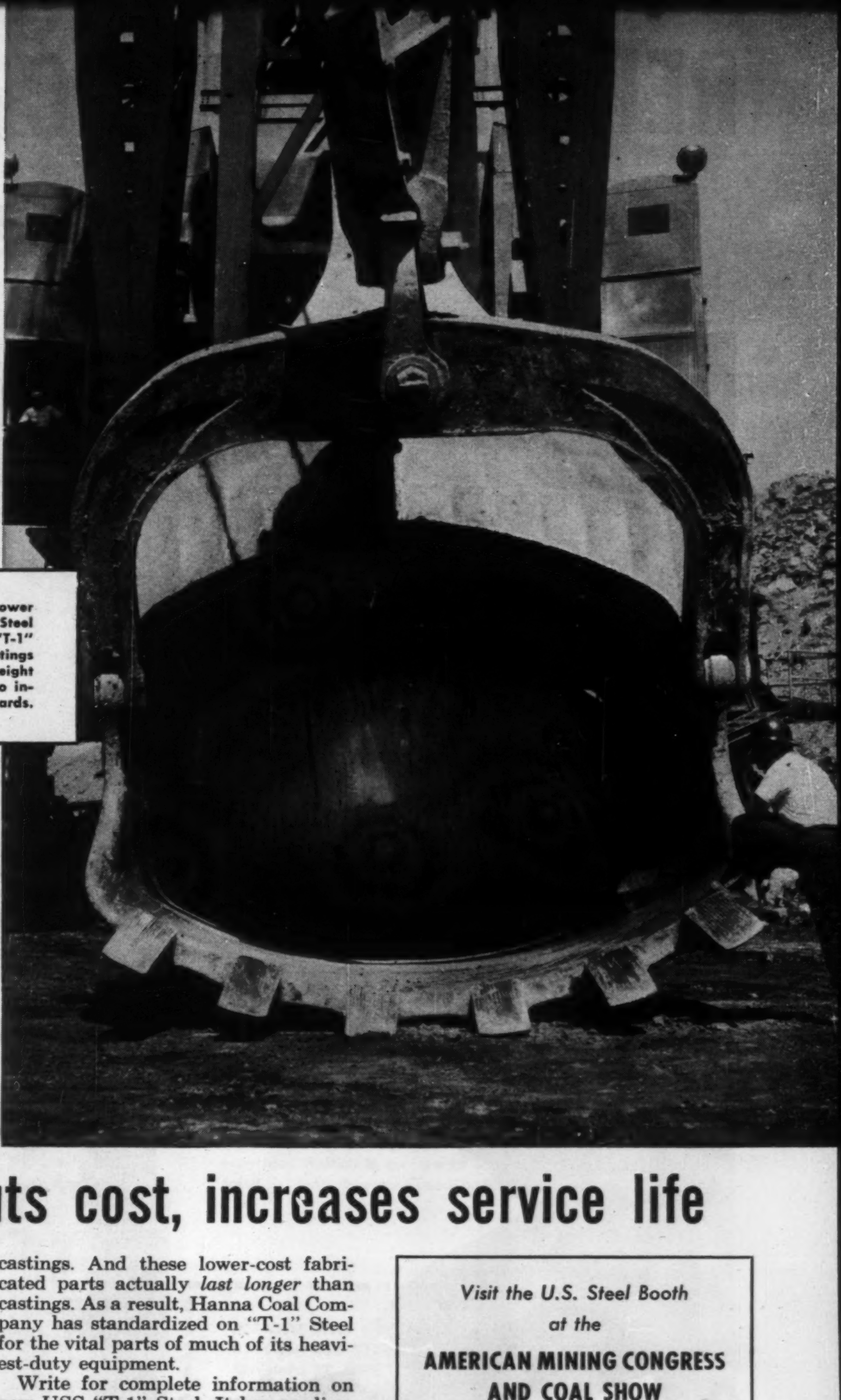
A considerable saving in costs resulted from extensive employment of native labor trained by the contractor. At the peak of employment, a total force of about 1,500 was made up of 12% Americans, 18% Europeans, mostly French, and 70% Moroccans.

Large employment of Moroccans had its minor drawbacks. The month-long observance of the Moslem Ramadan occurred in the heat of the summer and at the height of the job. Moslems take no food or moisture from sunrise to sunset during that period. Naturally, production slumped during the fast, but the crews made up lost ground and finished the paved areas within the time limits.

Remaining features of the Boulhaut Air Force base are designed on a rigid **austerity basis**. There are 165,000 sq ft of buildings, mostly quonset huts except for a few administrative and operational structures such as a concrete headquarters building and a concrete and timber mess hall.

Design and overall supervision of construction at Boulhaut are responsibilities of the Mediterranean Division, Corps of Engineers, with headquarters at Nouasseur Air Force Base, French Morocco. Brig. Gen. Walter K. Wilson, Jr. is division engineer. The East Atlantic District had immediate charge of Boulhaut until the end of 1954, when the district organization was dissolved. Col. J. P. Campbell was district engineer. For the Air Force, Lt. Col. J. O. Craig is installations representative on all Air Force work performed by the Mediterranean Division.





The entire shell of the bucket on this 50-cu. yd. power shovel is fabricated from ¾" and 6½" "T-1" Steel Plate. Liner plates are made of ½" "T-1" Steel. "T-1" Steel Plate only 6½" thick has replaced large castings a foot thick in the lip of the bucket. Lighter weight construction with "T-1" Steel made it possible to increase the cubic capacity of the bucket by ten yards.

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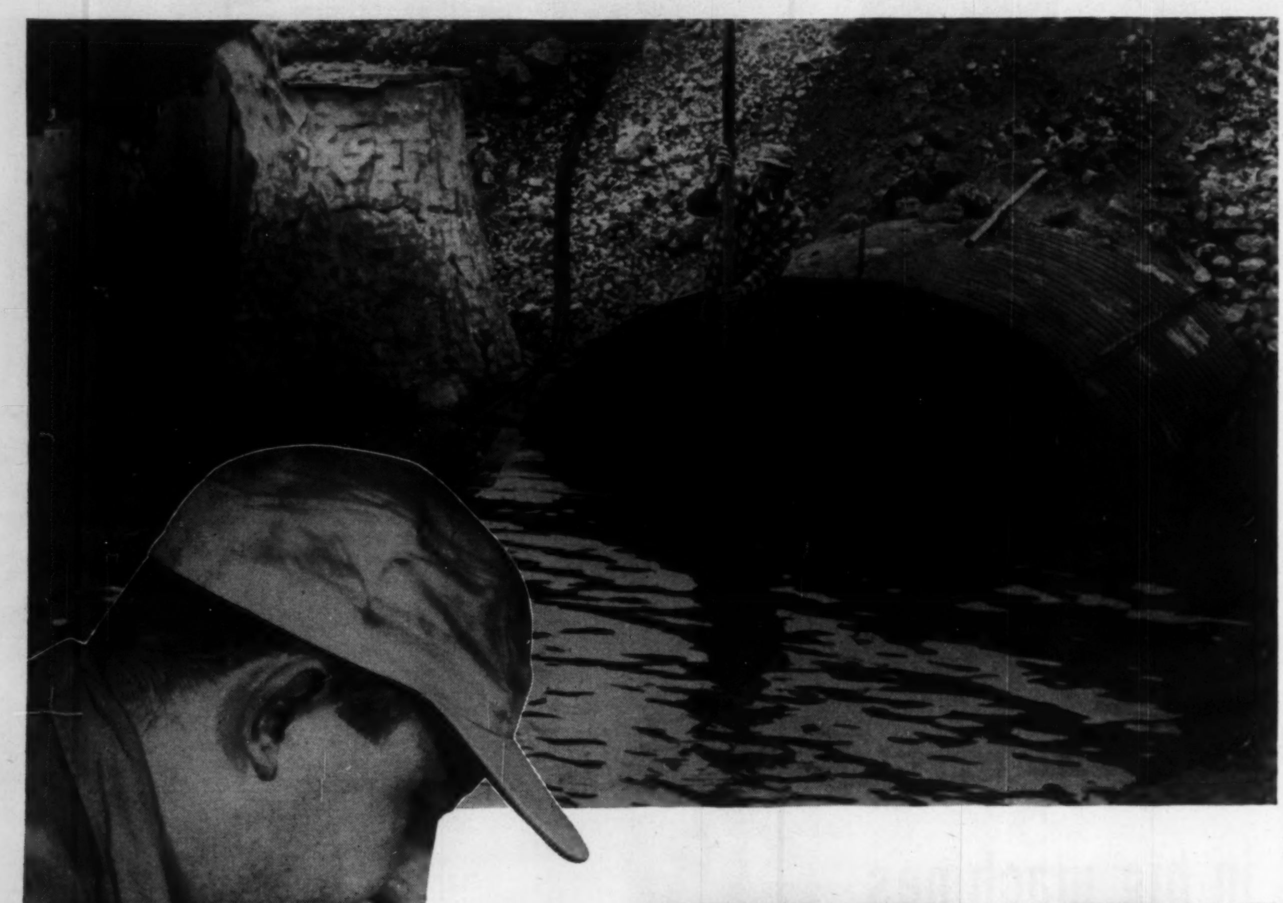

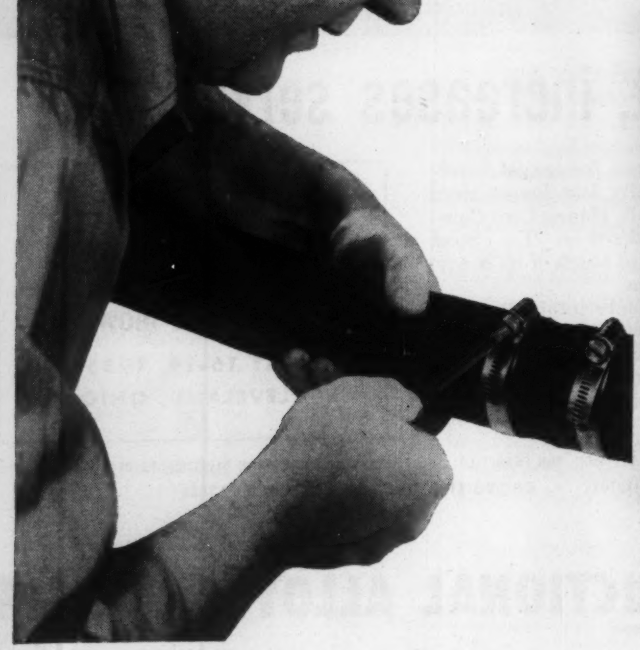

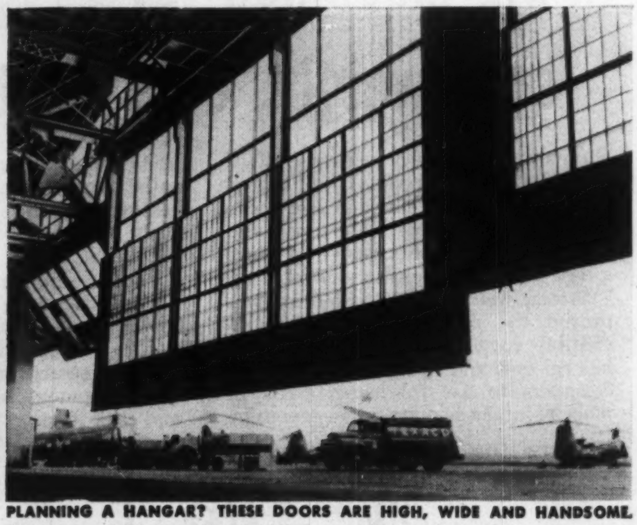

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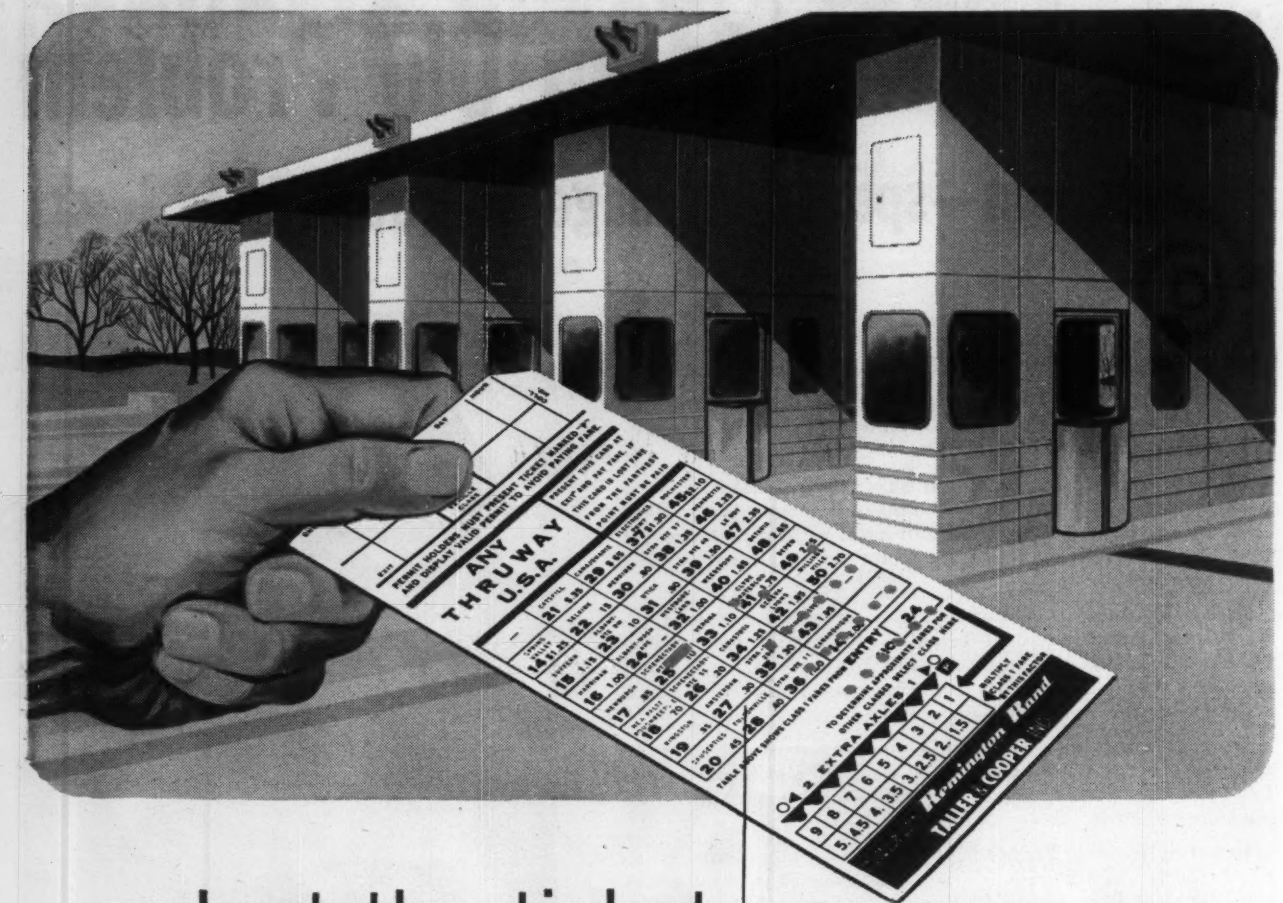
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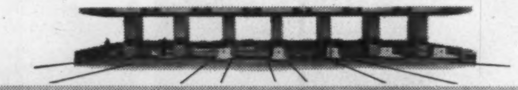

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Night Guide—

A Side-of-Pavement Line

A white line at the pavement's side evens traffic flow and allows higher night speeds with greater safety

A white line placed 18 in. from the edge of pavements is—from analysis of test data—one of the most promising developments in highway marking to come along in some time. Strictly a safety device, the line serves to guide the driver at night and makes it possible for him to look away from, instead of into, the glare of oncoming traffic in following his route.

Right shoulder lines have been most thoroughly studied in Connecticut where tests carried out last fall resulted in using the lines on the full length of the Merritt Parkway. A report covering the work "Effect of a White Reflectorized Shoulder Line on Lateral Placement—Four-lane Divided Highways," by Connecticut's state highway commissioner, G. Albert Hill, details the findings.

One of the interesting facts in the use of shoulder lines is that in daylight they tend to slow down the "pace" (range in speed) of the majority of traffic, while they increase this pace at night. Thus, day and night speeds become nearly the same on most sections of highway.

The Connecticut tests were begun in December, 1953 on a four-mile sector of the Merritt Parkway, which included a curve more than a quarter of a mile long. Trials were made without and with painted shoulder lines at various lateral positions on the pavement. Electrical timing equipment made a record of each vehicle on the road, its position and the speed with which it moved through the area under study. There were six reporting stations, and the performance of 11,289 vehicles was studied.

The analysis of findings turned up these major points:

- First of all, a white reflectorized continuous shoulder line affects both the speed and lateral placement of vehicles in the outer lanes of four-lane divided highways. Placement of a shoulder line 18 in. in from the edge of the pavement (outer lane has a width of 13 plus ft) resulted in the best constant lateral placement of vehicles during daylight hours. Under this condition, the maximum variation in vehicle placement was only 0.5 ft compared to similar values of 2.5 ft for no shoulder line and 2.3 ft for a line on the curb.

Where some drivers had traveled quite close to the center line, the line 18 in. from the pavement edge, by giving them a greater sense of security, let them move close to the outer edge of the pavement.

- The second major point from the analysis of test data was that a more uniform driving pattern with respect to speed was produced. This pattern probably results from the fact that the center line and shoulder line define a narrower area for the motorist to drive in than that which might appear available without the shoulder line. For certain sections of highway the daytime and nighttime speeds were the same. In this connection, taking one typical example from the Merritt Parkway test section, the pace of traffic at Station 1 ranged from 51-61 mph in daytime, and from 47-57 mph at night. After installation of a shoulder line 18 in. off the edge of pavement the daytime pace was 50-60 mph, a decrease of 1 mph while the nighttime pace increased 2 mph to 49-59 mph.

As a result of the tests the painting of the entire Merritt Parkway was undertaken in December, 1954. Each crew painted three miles per hour of single line. The highway department estimated the direct cost at $50 per mile per line. The department now intends to paint the entire Wilbur Cross Parkway when weather permits.

- **Accident prevention** – Connecticut is not the only state which has found benefits from the use of shoulder lines. While the original tests on the Merritt Parkway were being carried out, the Westchester Parkway Commission painted right shoulder lines on a particularly dangerous section of its Hutchinson River Parkway in June, 1954. There had been such an increase in the accident rate on this 3½-mi stretch adjoining the Connecticut line that it was popularly referred to as "Death Valley." A drop in accidents per month from 12-13 to 2-3 was reported shortly after the shoulder lines were added. In a later study of

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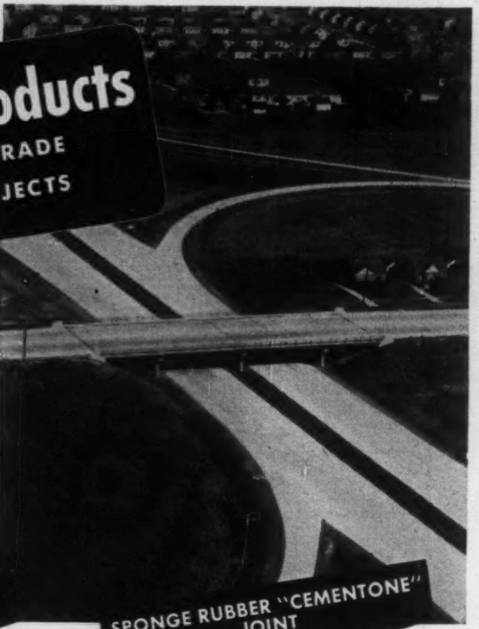

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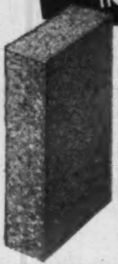

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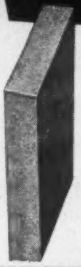
SPONGE RUBBER "CEMENTONE" JOINT FILLER



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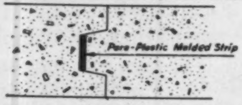
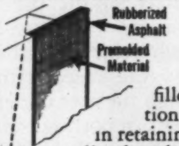


MOLDED PARA-PLASTIC

For sealing keyed construction or contraction joints in vertical walls. Maintains bond with concrete at temperatures down to sub-zero. Simple installation insures a resilient, moisture-tight seal of the joint.



PARA-LATERAL STRIP

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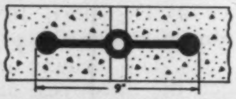

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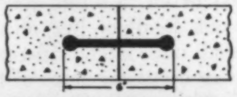

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accidents, it was found that only 14 occurred in the 5-month period after the painting, compared to 40 in the previous 5-month period.

On the basis of these findings, Westchester County Parkway Authorities plan not only to complete right shoulder line painting of the entire Hutchinson River Parkway, but also intend to give the same treatment at an early date to the Cross County and Saw Mill River Parkways as well. All three of these parkways are just north of heavily congested New York City.

• **Two-lane road treatment** – While Connecticut and New York are primarily concerned with right shoulder lines on four-lane divided highways, new interest is developing in the right shoulder marking of small two-lane roads. New Jersey has just completed 274 miles of outer edge marking of many of the state's two-lane blacktop roads. Upon completion of this two-lane highway marking program, the highway department will begin a full-scale program to mark its four-lane highways in the same fashion.

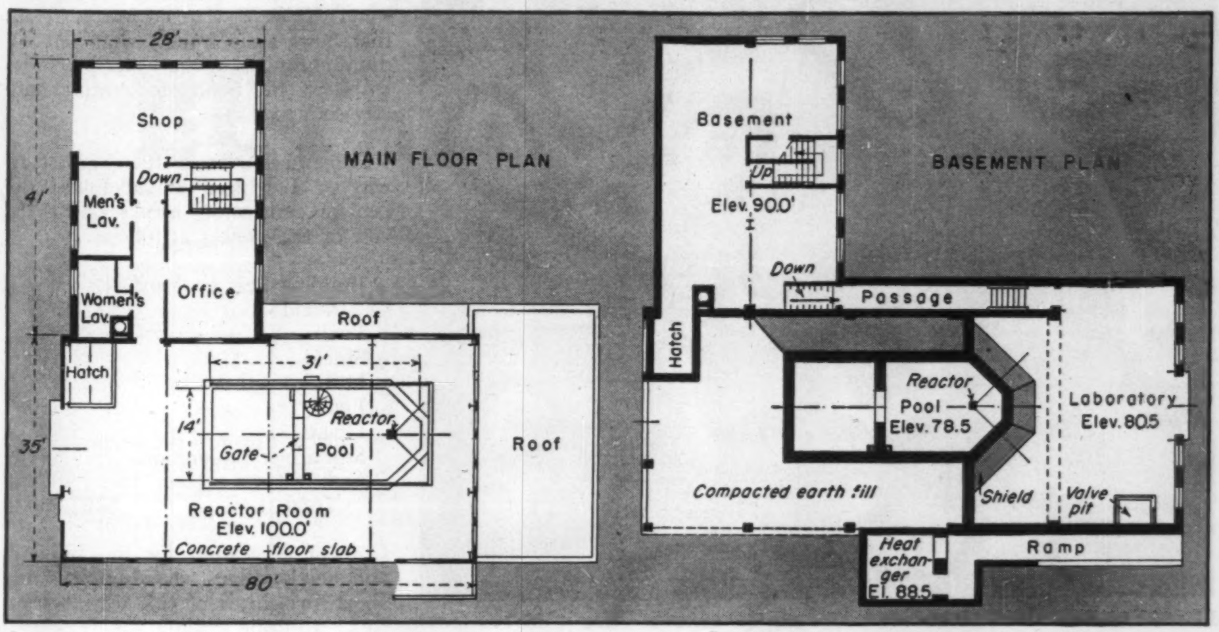
In order to obtain a straight line on the road's outer edges, New Jersey has devised a machine that can be guided from the white line at the center of the road. By means of an extension arm reaching from the center to the outer edge of the pavement it is possible to lay down a thin pilot line, which the striping machines then follow in applying paint and reflecting glass beads. Total quantities used in New Jersey in painting the 540 miles of lines tallied 7,500 gallons of paint and 15 tons of glass beads.

The West is also picking up interest in shoulder marking. James R. Halverson, chief traffic engineer of Utah, has announced that his state plans to paint a continuous line on all of its highways 28 ft wide and over this spring. The Utah markings, on the basis of the Connecticut study, will be placed 18 in. from the edge wherever the road width permits.

Altogether, some 22 states have expressed interest in the right shoulder markings. The Indiana Toll Road Commission is considering the technique, and according to present plans, it is the intention to use right shoulder markings on the entire length of the 230-mile Kansas Turnpike.

In Virginia, J. A. Anderson, commissioner of the department of highways, has announced that his state is experimenting with right shoulder lines on Route 11 near Pulaski, in a mountainous section plagued by frequent fogs.

Prime mover behind the shoulder marking idea has been Dr. J. V. N. Dorr, Founder-Chairman of Dorr, Oliver, Inc.


28'
Shop
41'
Down
Men's Lav.
Women's Lav.
Office
Roof
Hatch
31'
14'
35'
Reactor
Gate
Pool
Roof
Reactor Room
Elev. 100.0'
Concrete floor slab
80'
MAIN FLOOR PLAN
Basement
Up
Elev. 90.0'
Down
Passage
Hatch
Reactor
Pool
Elev. 78.5
Laboratory
Elev. 80.5
Compacted earth fill
Shield
Valve pit
Heat exchanger
El. 88.5
Ramp
BASEMENT PLAN

Nuclear Research Reactor for $310,000

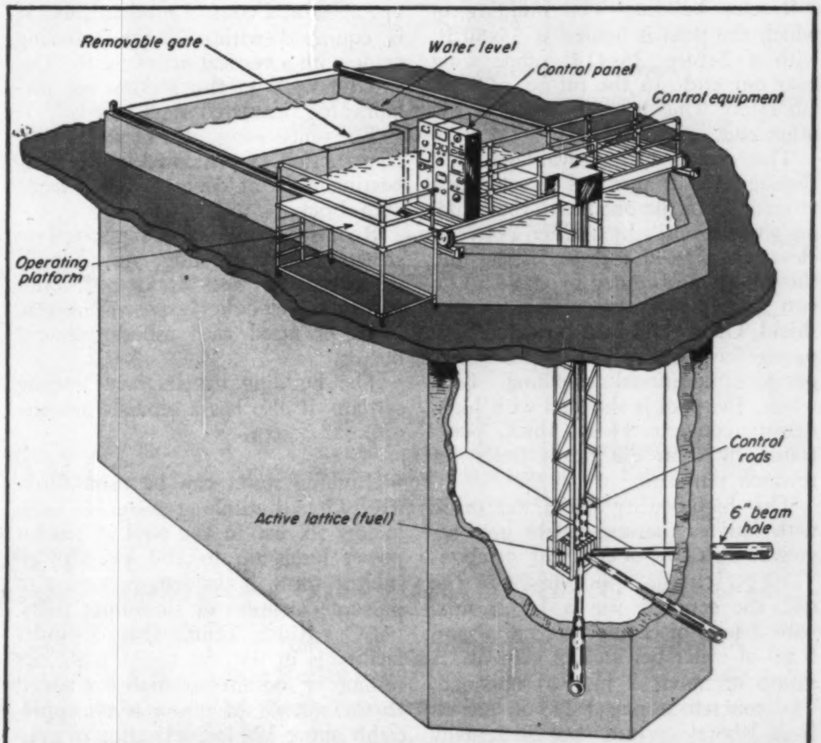
L. A. Richardson
G. K. Gillan
School of Engineering and Architecture
Pennsylvania State University
University Park, Pa.

How much does a nuclear reactor cost? At this stage, few have been built; so little information is available. Hence, the nuclear research reactor now nearing completion on the campus of Pennsylvania State University presents a valuable opportunity to add to the small but growing data on costs of reactors.

The reactor is a "swimming pool" type. It was selected because it probably is the safest type and requires a relatively small investment. Initially, it will be operated at a power level of 100 kw, but there are no plans for extracting useful power. The reactor will provide neutrons for research projects. To date, the building, pool and reactor shield have been completed.

• Why the pool?–The design calls for a reactor submerged in a deep pool of water, which serves a dual purpose: (1) It acts as a shield against neutrons and gamma rays. (2) It permits convection cooling of the unit.

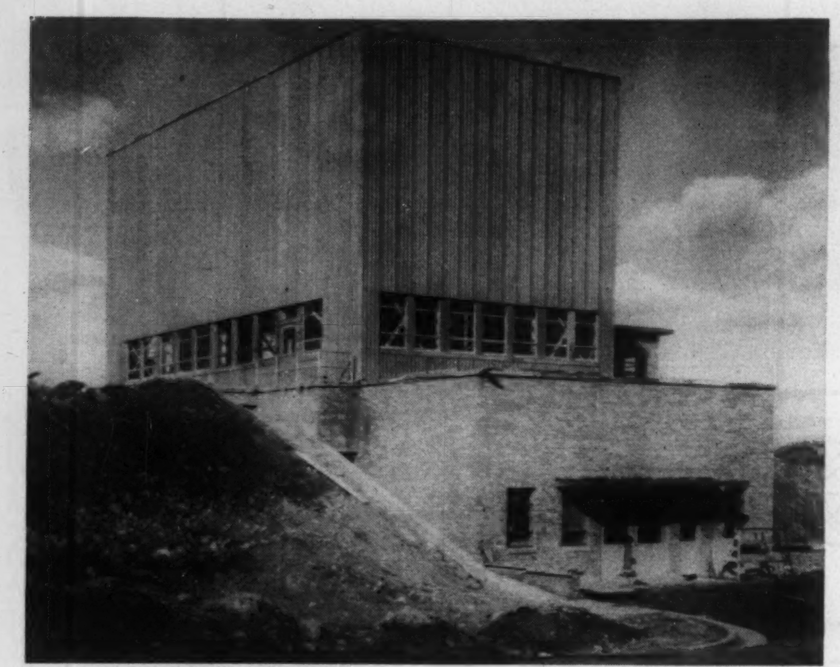
The fuel will be contained in enriched uranium-aluminum alloy plates, which will be placed in a grid to form an "active lattice." The grid will be attached to the lower end of a vertical framed column suspended from a mobile operating bridge. Mounted on rails atop the pool walls, the bridge will carry control mechanisms. The operator will stay safely on a platform alongside it.


Removable gate
Water level
Control panel
Control equipment
Operating platform
Control rods
Active lattice (fuel)
6" beam hole

SWIMMING POOL REACTOR at Pennsylvania State University keeps fuel immersed in water. Beam holes pass neutrons through the shield for research.

The pool is 14x31 ft inside, by 24 ft deep. Built of reinforced concrete, with 18-in.-thick walls, it is divided into two compartments, each of which may be drained and serviced independently without removing the fuel from the water The framed column and the fuel can be shifted through a removable gate in the dividing wall. Thus, the water shields personnel from the fuel at all times.

A dumbbell-shaped rubber dam



REACTOR BUILDING, built into a hill, provides access at grade to its two levels.

6 in. high prevents leakage through the joint at the base of the pool walls.

• **Reactor building**—The building in which the pool is housed is 35x80 ft. with a 2-story, 28x41-ft office wing near one end. In the future, a "hot" laboratory wing may be added at the other end.

The design takes advantage of a sloping site. It provides direct access at grade from the outside to the building's two levels, which differ 19½ ft in elevation. Placed endwise in the hill, the pool is surrounded by earth fill on two sides, which serves as a low-cost shield. On a third side bordered by a passageway, ordinary stone concrete provides additional shielding. Elsewhere, the pool is shielded with high-density concrete 44 in. thick, penetrated by 6-in. dia beam holes for research purposes.

This high-density shield was made with barytes (barium-sulfate ore) aggregate at a cost of $11,450, or about $180 per cu yd. Truck-mixed at the site, the concrete was a 1:3½:5 mix, with 7 bags of cement per cu yd and 6 gal of water per sack of cement. A slump of about 2 in. was obtained. The concrete averaged 215 lb per cu ft in laboratory tests, but as actually placed, it weighed 5 lb less.

Near the shield, at the lower level of the building, is a 24x39-ft laboratory, where equipment can utilize neutron beams collimated by the beam holes through the shield. The laboratory has access at grade level to the outside.

On the upper level are the main reactor bay, offices, shop and wash rooms. The main bay, of steel-frame construction, is 35x62 ft, with a clear height of 29 ft 3 in. under the roof trusses. It contains a power panel and operating and control mechanisms. It is equipped with a 3-ton traveling crane with a vertical lift of 32 ft. The exterior walls in this section are prefabricated, insulated steel panels.

The office wing, also of steel-frame construction, is enclosed with load-bearing walls of concrete block faced with brick.

Roof decks and floors, supported on structural steel framing, are all built of corrugated steel decking. Interior partitions are either exposed concrete block or faced with asbestos-cement boards.

The building has its own heating system. It also has a separate sewage-disposal system.

• **Drinking water can be used**—Ordinary filtered drinking water is satisfactory for use in the pool at reactor power levels up to 100 kw. An inhibitor must be added, however, to prevent corrosion of aluminum parts. (At Oak Ridge, Tenn., where a similar facility is in use, 50 to 75 parts per million of sodium chromate are added to the water.) At power levels appreciably above 100 kw, activation of minerals in the water becomes a problem; so it is necessary to fill the pool with distilled water.

If ordinary drinking water is used, experience has shown that algae will cloud the water in two or three months. Since many experiments depend on observation of the reactor through the water, the pool will have to be drained and refilled. After being monitored, to be certain that activation is below tolerance levels, the water will be discharged into a stream that flows away from town. The sodium chromate in the water precludes emptying the pool into existing sanitary sewers.

• **Construction costs**—R. Tann of Irwin & Leighton, Philadelphia, the general contractor, breaks down the cost of the project as follows:

Building (less pool and shield)	$128,975
Pool	21,000
Shield	11,450
Utilities and drives	22,175
Fence	4,500
Crane	5,508
Subsurface exploration	1,344
Architect and engineer fees	13,008
Total	**$207,960**

Cost of excavation for the building and service lines was high because about two-thirds of this work was in rock, requiring drilling and blasting.

Reactor and controls are being fabricated now. This equipment is estimated to cost about $100,000. The total cost, therefore, adds up to about $310,000.

The building was designed by members of the faculty of the College of Engineering and Architecture, with Harbeson, Hough, Livingston and Larson, of Philadelphia, Pa., as consulting architects Work was organized and correlated by Louis A. Richardson, professor of architectual engineering. Design of the reactor proper was by W. M. Breazeale and associates. Contracts and general supervision were under the direction of the Department of Physical Plant, Walter H. Wiegand, director.

Hotel Building Boom Hits $37 Million in Las Vegas

Resort hotels in Las Vegas, Nev., either building now or on the planning boards, total some $37 million. Five resort hotels are under construction on the "Strip," representing an investment of $18 million—Riviera, Dunes, Royal Nevada, Stardust and Desert Spa.

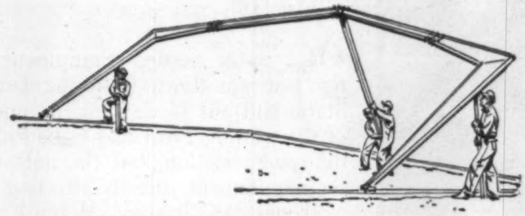
In the western section of Las Vegas, the $25-million Moulin Rouge is nearing completion, and work has started on the $3.5-million, 10-story Fremont Hotel in downtown Las Vegas.

There are two other companies ready to start construction on the "Strip" of the Lady Luck and the Tropicana, which involve about $7 million.

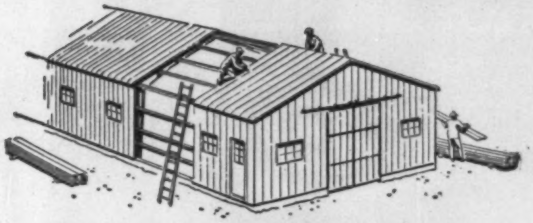
In the discussion state is the proposed El Morocco, to be located between Riviera and Desert Spa, and which may run up to as much as $6 million.

You can do all this with a

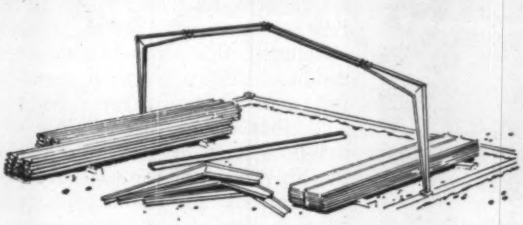
BUTLER steel building



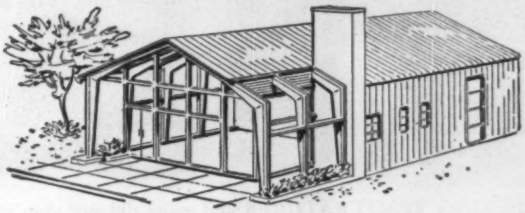
Complete it in half the time—
Half-finished at the factory—with precision die-formed and punched cover panels—a Butler building goes up fast. It simply bolts together.



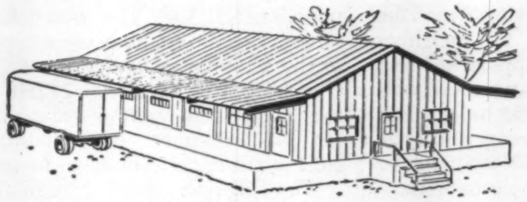
Expand it economically while in use—
Move out walls and bolt in new sections with less than half the usual delay and mess—and without loss of materials. Costs less too!



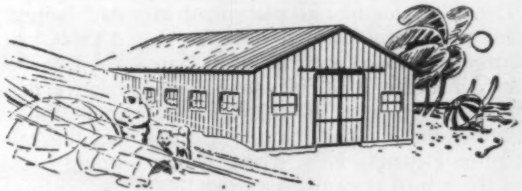
Move it quickly and conveniently—
Yes . . . move it, with 100% salvage of the original materials! Simply remove bolts, transport sections to new site, and re-assemble.



Finish it to any degree of beauty—
Your Butler dealer will build to meet the needs of your business—install decorations, masonry front, offices, interior finish, etc.



Modify it to any use—
Need an attractive store or dealership, loading dock, hoists or monorails? Your Butler dealer will plan and install what you need.



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Designed to seal tight—and precision made—a Butler building is storm-proof. Easily insulated against tropic or arctic weather.

...and buy it for LESS *than a conventional building!*

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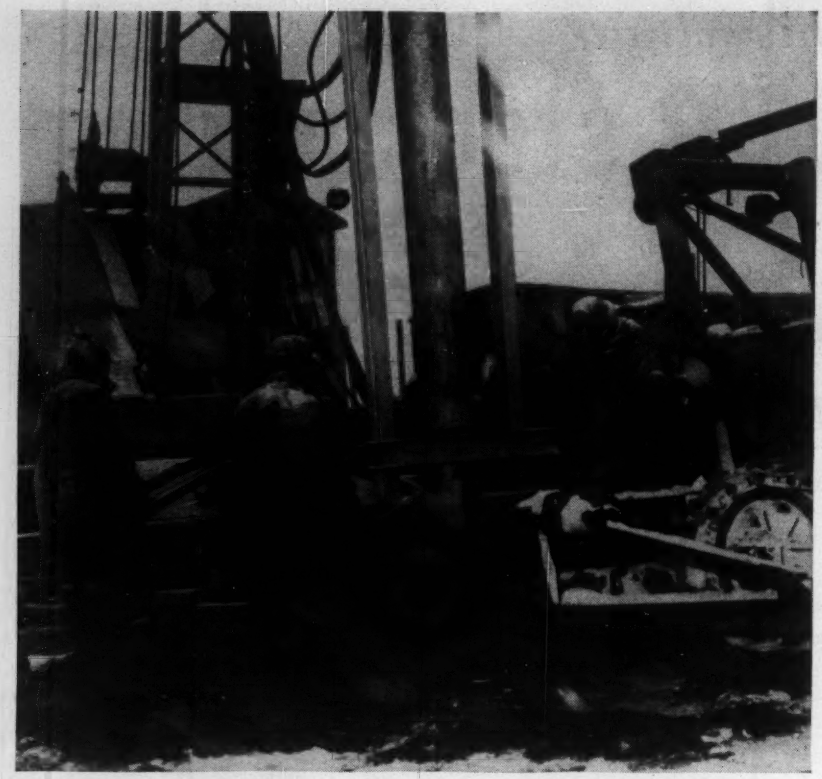


FREEZING TEMPERATURES and snow did not stop sandfill compaction in Newfoundland. Bulldozer pushes additional material into hole made by vibrating spud.

Compaction Saves Pile Cost

Pitfalls of granular-fill placement in water were demonstrated by a U. S. Corps of Engineers experiment at Harman Air Force Base, Newfoundland. The problem and its solutions are described in a report by the Corps' Atlantic District, New York, which had the job of strengthening the support under spread footings.

The fill was placed by end-dumping and bulldozing in a pond having a firm bottom. It was compacted satisfactorily above waterline to a height of 8 ft. The embankment stood up well until aircraft vibrations were imposed on a new pavement atop the fill; then substantial settlements—in places as much as 0.9 ft—occurred.

• Hangar in danger—Greatest danger in the situation lay at an adjacent hangar site, where footings and foundation walls had been built in the meanwhile. The hangar was to be an "alert" type, with trunnion-mounted quick-opening doors. It looked as if vibrations would surely cause foundation settlements, which, if differential in the slightest degree, would slow or jam door operation.

Borings and test-pit investigations revealed that the 30 ft fill of granular-material below waterline was in its loosest form—having modified AASHO densities in the neighborhood of 80%. This approached zero relative density. Vibration, even the small amount that could be transmitted through the 8-ft compacted layer, would consolidate the loose sand below, permitting the whole to settle.

It was first thought that the footings and walls would have to be torn out and rebuilt on steel piles, but since loose granular material is readily compacted by the vibroflotation technique (ENR June 23, 1949, p. 60; July 2, 1953, p. 35) the Corps decided to investigate the latter's effectiveness and cost—for "underpinning" the existing foundations—relative to the cost of new foundations on steel piles. With vibroflotation, sand in the loose deposit would be compacted so that no settlement could take place.

The compaction technique consists of inserting a large vibrating spud into the material to be consolidated. Water jets on the spud put the sand in a "quick" condition which, in the presence of vibration, permits the grains to settle into their most dense arrangement. The spud jets itself downward to the desired depth, then remains there until the sand surrounding it has been compacted. Compaction is achieved when the vibration-imparting electric motor within the spud begins to work hard—a state indicated by increased current-demand shown on an ammeter above ground. The spud is raised in one-foot stages to accomplish compaction progressively upward. Sand is bulldozed into the hole to make up the volume loss caused by compaction.

• Hot water needed—Equipment for the test was flown from the United States and put to work in the middle of the winter. Frost had to be broken for spud insertion, but the only winter requirement directly affecting the work was water-heating. Water had to be kept above 50 deg. F, with air temperatures ranging from 10 to 32 deg F.

Evaluations of compaction in the loose layer indicated an increase from about zero relative density to 81% relative density. It was, therefore, concluded that vibroflotation would produce safe foundation conditions for the alert hangar. Moreover, ". . . that the in-place footings would not be injured or materially displaced by this process of compaction."

Insertions for foundation underpinning were made as close as possible to the footings, the compaction directly beneath the footings resulting from the radius of influence of the insertions—normally well above 4 ft.

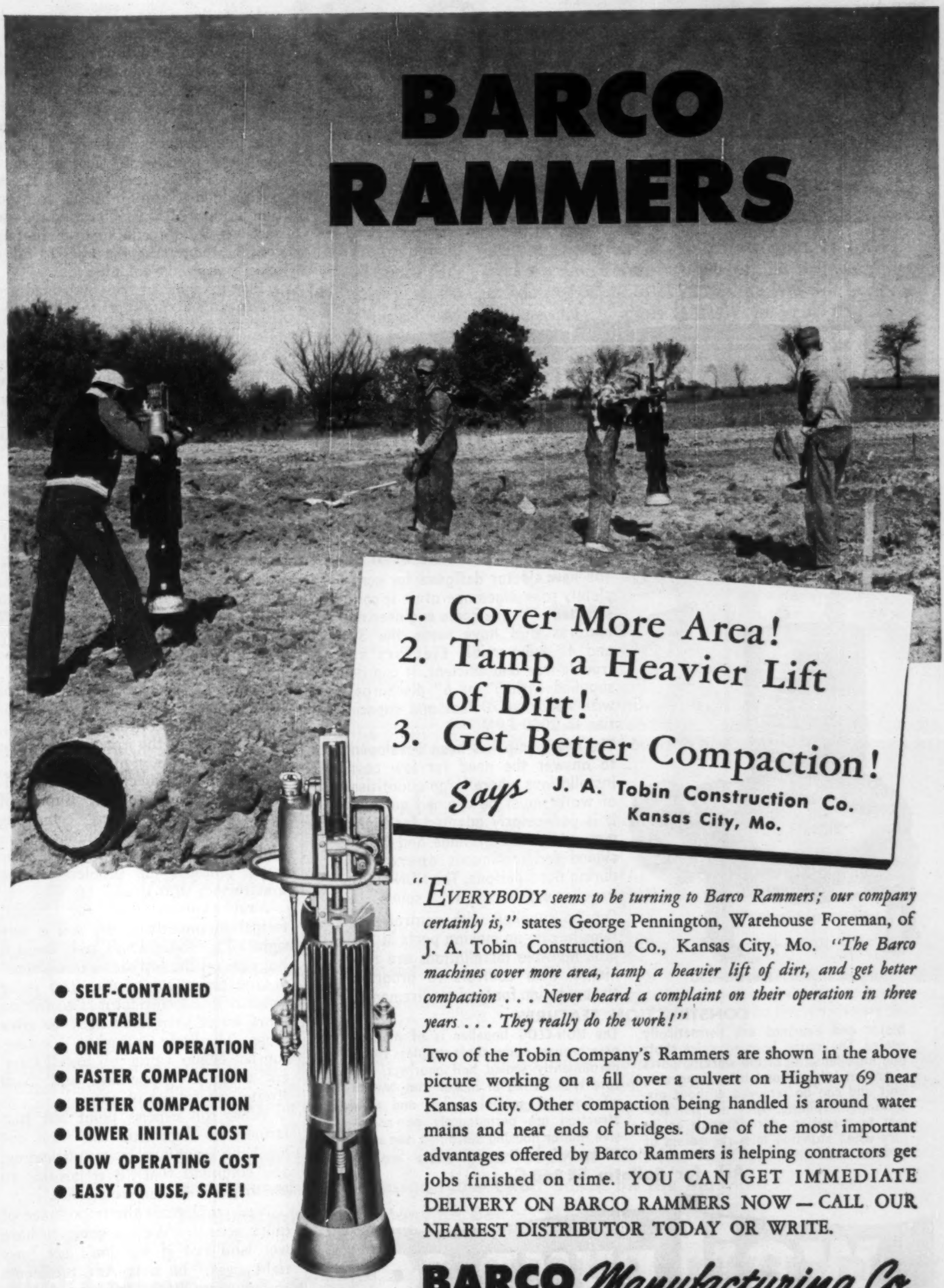
Cost-estimates for foundation reconstruction on 80 cast-in-place concrete piles was $81,500. The vibroflotation estimate was $55,600, being composed of the Vibroflotation Foundation Co. (Pittsburgh) estimate of $24,040 and the airbase contractor's estimate of $31,560 for crane, labor, pumping, electric current and material handling.

The Engineers decided to go ahead with underpinning by vibroflotation—and to enlarge the job's scope by improving floor-slab support. The report states, ". . . in view of the excellent cost advantage . . . it was further decided to compact not only the material under the footings and walls to a depth of 31 ft, but also the material under the hangar floor to a depth of 20 ft." (The floor slabs had not yet been placed.)

• Better job possible—The enlarged job scope increased the earth volume treated from 306,900 cu ft to 650,100 cu ft. The prime contractor figured a 35% increase in cost for his part of the work, and the subcontractor's price increased $18,000 to $42,000, bringing the total cost to $91,000.

Unlike the test, the full-scale job was conducted when daytime temperatures were above freezing. Two vibroflotation rigs made 649 penetrations (31 ft and 20 ft) in three weeks, in

BARCO RAMMERS



1. Cover More Area!
2. Tamp a Heavier Lift of Dirt!
3. Get Better Compaction!

Says **J. A. Tobin Construction Co.**
Kansas City, Mo.

"*EVERYBODY seems to be turning to Barco Rammers; our company certainly is,*" states George Pennington, Warehouse Foreman, of J. A. Tobin Construction Co., Kansas City, Mo. "*The Barco machines cover more area, tamp a heavier lift of dirt, and get better compaction . . . Never heard a complaint on their operation in three years . . . They really do the work!*"

Two of the Tobin Company's Rammers are shown in the above picture working on a fill over a culvert on Highway 69 near Kansas City. Other compaction being handled is around water mains and near ends of bridges. One of the most important advantages offered by Barco Rammers is helping contractors get jobs finished on time. YOU CAN GET IMMEDIATE DELIVERY ON BARCO RAMMERS NOW—CALL OUR NEAREST DISTRIBUTOR TODAY OR WRITE.

- **SELF-CONTAINED**
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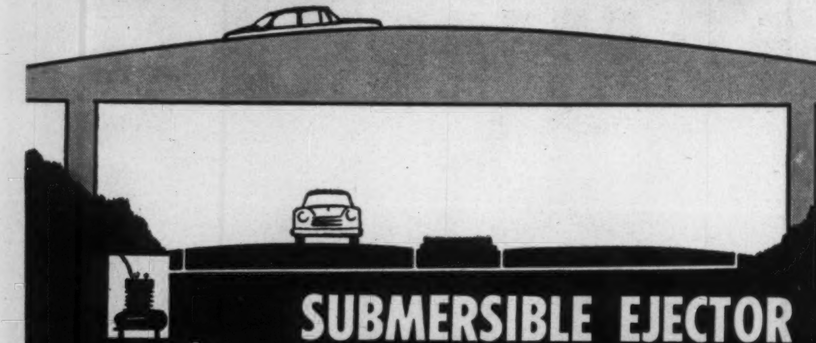

SUBMERSIBLE EJECTOR

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A "Big Brother" to the famous 3" and 4" Pumps

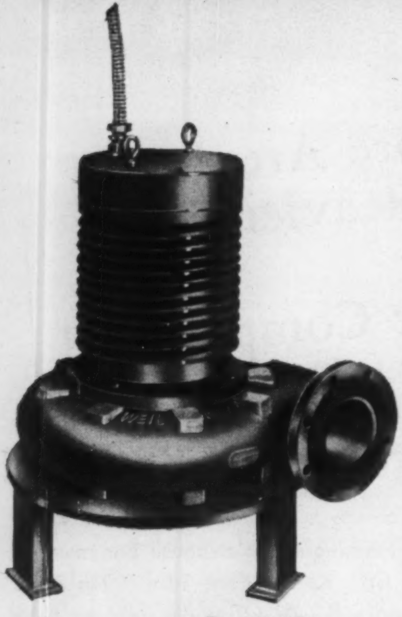

Fig. SE-890

NO PUMP HOUSE REQUIRED

Capacities to 2000 GPM

The new ejector designed for completely submerged operation is constructed with the same engineering features that have made the 3" and 4" Submersible Ejectors so trouble-free and efficient. It can be supplied with 5" or 6" discharge, with heads to 70 feet and capacities to 2000 GPM.

The new pump has been developed to answer the need for low cost installations where large quantities of water must be drained quickly. It is particularly adapted for highway underpass drainage and is designed for continuous operation during flood periods. The NON-CLOG Impeller will handle 3½" solids.

Can be supplied with control systems having no moving parts in the pits. Multiple installations are furnished with controls to program the operation for load requirements.

CONSTRUCTION FEATURES:

Motor and bearings are hermetically sealed. The motor, housing, drive shaft and impeller — all of the working parts — are an integral and interchangeable unit and can be removed without disturbing the piping. They are not subject to corrosion, deterioration or injury when standing idle—regardless of weather conditions.

The NON-CLOG Impeller is of manganese bronze; pump shaft stainless steel; permanently sealed ball bearings; volute type casing of nickel iron; motor windings of special design and construction are permanently non-corrosive; motor housing machined and sealed to exclude dirt and water.

Ask for Bulletin SE 860 C

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order to have the foundations ready in time for steel erection.

The existing 24 footings and walls settled between ¼ in. and 2¾ in. during compaction, while maximum lateral movement was less than ¾ in. "These values were within the allowable tolerance to permit steel erection on these footings by making slight modifications," the report states. Sand added to the fill during compaction amounted to 3,400 cu yd. Compactions were made first at footing corners, then along the sides to minimize footing movement.

Bearing value of the compacted soil is estimated at 5,000 psf to 8,000 psf—expected settlement is negligible.

• **Management**—Atlantic District Engineer in charge of the project was Col. H. B. Lux. D. E. Bailey and W. J. Klenans were in charge of work for Vibroflotation Foundation Co. Prime contractor was Metcalfe-Hamilton of New York.

Columbia Basin Plagued With Over-Irrigation

The Columbia Basin irrigation project is faced with getting rid of water on the fertile acres which blew with dust a decade ago. A rising water table in sections, particularly near Quincy, has brought a rise of 150 ft in the water table since irrigation began.

Water has risen to within 10 ft of the surface in a few places. Near Quincy, a drain continues to run with water, although the irrigation flow has been shut off for months.

E. H. Neal, director of operations and maintenance for the Bureau of Reclamation, has been convening meetings of growers in the area from Quincy south to Pasco to discuss the water problem—the problem of too much water, this time.

Neal explains that the "basalt formation underlying the soil is very tight. The water won't sink through but runs off the top of the formation."

One major solution to the rising water is to educate farmers to use no more water than they need to grow crops. The State College of Washington has begun a program to tell farmers what is happening, and Neal stresses careful use of water.

WSC soil experts point out that farmers on high land can wash out low-lying neighbors by over-irrigating, and comment that "it is possible to lose more land than we reclaim."

Neal emphasizes the importance of quick action. "We are going to have wet land fast if we don't get busy right away," he says. And presidents of Columbia Basin irrigation districts have begun meetings to talk out the problem of too much water.

Transite Sewer Pipe provides these 4 basic economies

The engineer, the contractor and the taxpayer—all benefit when Transite® Pipe is used for sewer lines. Costs are cut in many ways—among them the four basic Sewer Pipe economies . . . in system design . . . in installation . . . in operation . . . in maintenance. If you make a quick run-through of the following condensed check list, chances are you will find savings which apply directly to your sewer system problems.

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1. System Design

(Typical Economies)

- Use of smaller diameter pipe
- Installation at flatter slopes
- Installation in shallower trenches
- Savings in amount of material excavated
- Smaller earth loads
- Elimination of cradling
- Location of treatment plant at higher level
- Elimination of pumping

Users have found—With its high flow capacity (flow coefficient n= 0.010 derived from the Manning formula) and with its maintained strength, Transite Sewer Pipe contributes to typical system design economies.

2. Installation

(Typical Economies)

- Fewer joints
- Easier handling
- Smaller crews
- Speedier assembly
- Assurance that joints pass severe infiltration tests

Users have found—With its longer lengths, light weight, ease of assembly and tight, quickly made joints, Transite Sewer Pipe contributes to typical installation economies.

3. Operation

(Typical Economies)

- Infiltration treatment cost drastically reduced
- Only normal sewage treated

Users have found—With its tight joints connected by Johns-Manville's Ring-Tite® Coupling, Transite Sewer Pipe contributes to typical operation economies.

4. Maintenance

(Typical Economies)

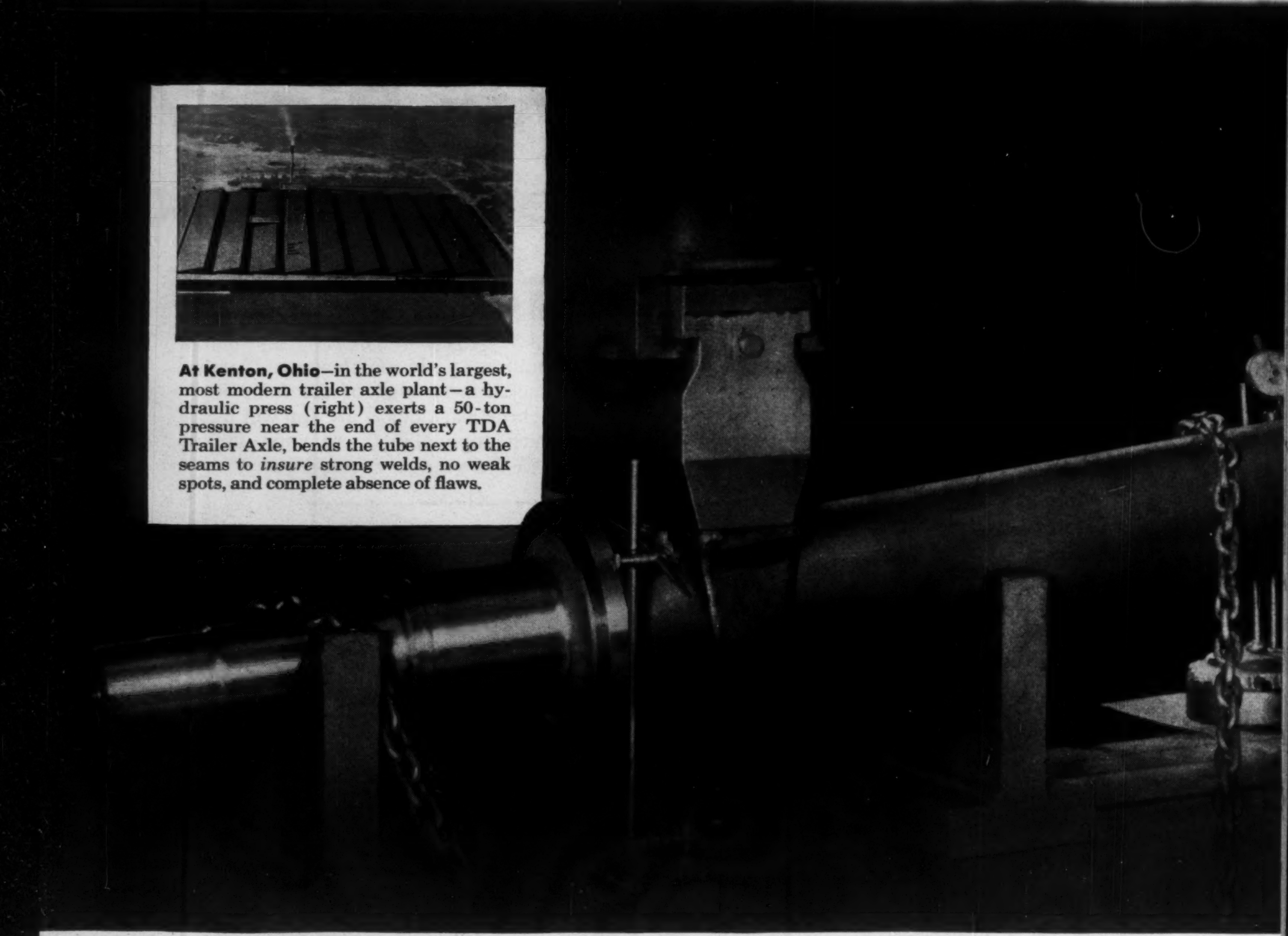
- Tree roots kept out—minimizes cleaning
- Sewers kept smooth and intact—pipe stays strong, joints stay resilient
- Need for frequent inspections reduced

Users have found—With its maintained strength and with its tight joints, Transite Sewer Pipe contributes to typical maintenance economies year after year.

For further information and your copy of TR-94A, helpful, widely used Sewer Design Flow Chart based on the Manning Formula, write Johns-Manville, Box 60, New York 16, New York

Johns-Manville TRANSITE SEWER PIPE

the asbestos-cement sewer pipe with the tight joints



At Kenton, Ohio—in the world's largest, most modern trailer axle plant—a hydraulic press (right) exerts a 50-ton pressure near the end of every TDA Trailer Axle, bends the tube next to the seams to *insure* strong welds, no weak spots, and complete absence of flaws.

WE BEND TRAILER AXLES

...to insure that all welded super-strong!

Another example of TDA hidden quality—
typical of the ends to which we go for greater highway safety
—proof in advance that TDA Trailer Axles can take it!

Double trouble! Yes, TDA Trailer Axles are torture-tested at *both* the Kenton, Ohio plant—and the famous Timken-Detroit indoor proving ground in Detroit!

The Detroit "Torture Chamber" is a multi-thousand-acre proving ground condensed into one room. Here, our engineers can subject stock axles and gearing *indoors* to any outdoor operating condition. Put over 50 years' experience gained in building axles for trucks, buses, trailers, farm machinery to work for you.

Result? Far greater highway safety, longer axle life, reduced maintenance, repairs and downtime; lowered operating costs. *No wonder Timken-Detroit Axles are the choice of leading manufacturers and operators.*

For your own protection
and safety specify Genuine
TDA Equipment Parts!

Take no chances with substitute replacement parts. For longer axle life —for greater operating safety—insist upon genuine Timken-Detroit axle and brake parts, identical to your axles' original equipment.

For a dependable factory-type job, to cut labor and adjustment costs... *order* your replacement parts by TDA number from your trailer manufacturer.

TDA... the Lightest trailer axle on the market... and the strongest!

Proved far stronger, more rugged and safer in all-out "Torture Chamber" tests, TDA Trailer Axles are also many pounds lighter than any competing axles on the market today. Weight saving is possible through the use of TDA lightweight, pressed steel brake shoes, up to 50% lighter, and stronger, too.

Other hidden quality features that increase TDA life and performance are forged alloy steel spindles, cam roller mountings in Nylon bushings, machined cam head, cleaner cut splines and self-aligning camshaft support brackets. Good reasons leading manufacturers and operators specify TDA.

Heat and stress relief treatment for greater strength!

Note the greater extent and depth of heat treatment given this TDA Cam and Seamless Tube. Tube is heat-treated for the *full length*. And, the camshaft is *completely* heat-treated; not just the head. An important ingredient of TDA superiority.

A stress relief treatment is given *every* tube to relieve any stresses created during machining and welding.

TDA Spindles forged of alloy steel have higher rockwell hardness than any other axle spindle on the market.

WITH 50-TON PRESSURE

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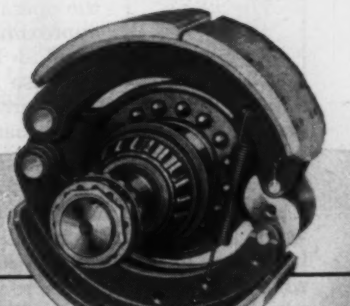
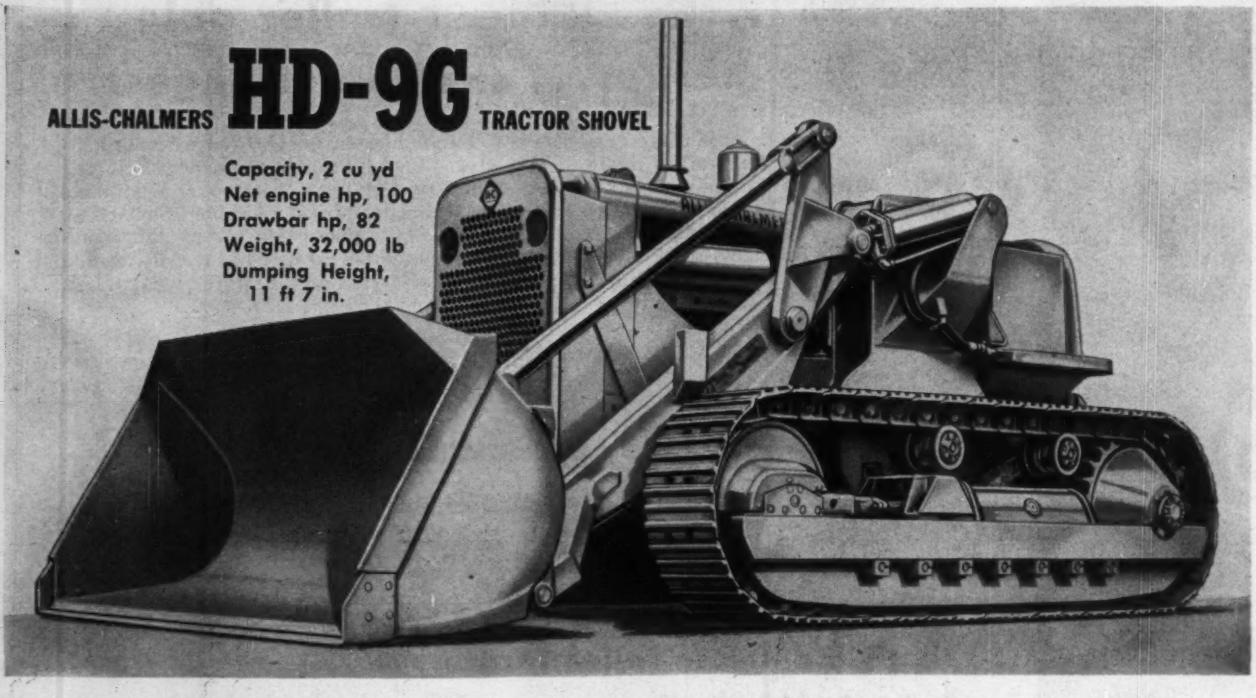


ONLY TDA BRAKES give all these tested advantages!

- Brake shoes made of steel save up to 40 pounds per axle . . . give strong braking action with no distortion.
- Patented liner shape—thickest where wear is greatest.
- Liners riveted on—no chance of movement on shoe.
- Liners circle-ground to cover all efficient braking area of shoe.
- Rustproofed anchor pins locked in. Ends of pin sealed against foreign matter.
- First with self-aligning camshaft housings.
- Cam rollers heat-treated to roll smoother, wear longer.
- First with all-Nylon camshaft bushings.
- Compare similar products part for part and prove to yourself that TDA brakes incorporate the finest quality materials, skilled workmanship and advanced design.

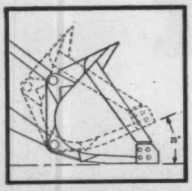


POPULAR 2-YD HD-9G TRACTOR SHOVEL NOW OFFERS

Higher Work Capacity

Design refinements in the Allis-Chalmers HD-9G now make it even more productive than ever. First, the net engine output has been increased to 100 hp, with 23,000 lb of push for extra crowding and digging ability, fast work cycles.

Streamlined bucket design now helps roll in large loads with less tractor effort. The back of the bucket has been brought forward and the sides extended to cut spillage, put more pay load where it's wanted. Cleaner dumping with the new bucket saves the operator time and effort shaking out loads.



A new addition to the wide variety of attachments available for the HD-9G Tractor Shovel is the Tip-Back bucket which allows the operator to roll the bucket back approximately 25° at ground level. Ideal for handling greater capacities of loose stockpiled materials, the Tip-Back bucket can be carried lower to the ground for greater stability . . . can load bulky objects easier.

New-type ceramic master clutch lining reduces lever pull, makes it easier for the operator to do more. The new HD-9G helps the operator do more in other ways, too — giving him full vision, fast and easy control, cleaner platform and more comfortable seat from which to work, and more working time with truck wheels, support rollers and idlers that need greasing only once every 1,000 hours.

Lower Operating Cost

Design improvements also add longer life to the HD-9G under all work conditions. Heavy box-section booms are 50 percent stronger, assuring proper alignment even working in the toughest materials. The low design of the new HD-9G combination stabilizer and cowl not only offers easy accessibility for maintenance and service, but contributes to maximum operator vision. New ceramic master clutch lining operates longer between adjustments, increases clutch life.

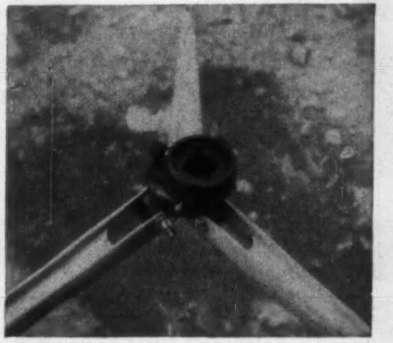
Hydraulic system provides new maintenance simplicity, safety of operation, as well as improved visibility. With new-style tank, there are few external fittings, greatly reducing possibility of outside leaks. Magnetic filters and suction-line screens protect the entire system from damaging grit. New, improved hydraulic pump is designed for long life as well as fast and accurate bucket action.

Heavy-duty truck wheels and idlers are available for particularly tough working conditions. One-piece, full-length main frame permits unit construction so that major assemblies can be removed without disturbing adjacent units, putting tractor back on the job in hours rather than days.

☆ ☆ ☆

See your Allis-Chalmers dealer for further information on what the HD-9G can do for you — or a demonstration right on your job.

ALLIS-CHALMERS
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.



SHIFTING TRIPOD head permits a 2-in. displacement in two directions.

OBJECTIVE LENS of plummet is sealed and protected by small, plain glass insert.

TRANSIT IS CENTERED over the station point by shifting head through use of thumbscrews. Note that plummet telescope is horizontal for comfortable viewing.

Gurley Transit Gets Optical Plummet

For years, foreign instrument makers have incorporated optical plummet systems on their theodolites. Now for the first time this time-saving device is available on an American transit.

Basically, the optical plummet is a telescope fitted into a hole bored in the vertical center or spindle of the transit. When the plate of the transit is level, the telescope will be vertical. And here is where difficulty is encountered with most optical plummets.

In shifting the transit to line up directly over a point, the usual shifting center quickly unlevels the plate. Even with an experienced instrument man, a dozen shiftings, levelings and sightings might be necessary to be sure of accuracy. Any more than that and the operator starts uncoiling the string from the plumb bob he's had tucked in his back pocket.

But the shifting head on Gurley has been designed to eliminate all this falderal. Two thumbscrews permit moving the transit in two directions at right angles to each other—with little disturbance to the level of the plate. Thus the optical plummet is operative almost continuously during the centering procedure.

The reticle in the telescope consists of three concentric circles and two cross hairs. The center circle is just large enough to match the stake tack of the station point at normal set up height.

To ease operation, the telescope is turned via a prism so that the operator can look through the telescope horizontally. The compass box is eliminated on this type of transit because of space limitations.

To set up the transit equipped with an optical plummet it may first be necessary to hook up a standard plumb bob for rough centering. But most operators find that they can set up by eye after very little practice. When the tripod and instrument is roughly in place, the tripod bolts are tightened, the plate leveled, and, if used, the plumb bob is removed. The reticle of the plummet telescope is focussed on the point by moving the eyepiece in or out. With the clamps on the shifting head loose, the tangent screws are used to move the center circle over the station point. If necessary, the plate is releveled and a final centering adjustment is made on the plummet. The clamps on the shifting head are then tightened and the centering checked. This is done simply by revolving the instrument and sighting through the plummet at various points. The circle should remain on the point throughout the cycle.

It is estimated that the optical plummet will add about $150 to the cost of the standard transit. W. & L. E. GURLEY, STATION PLAZA, TROY, N. Y.

Plastic Compound Makes Long-Wearing Traffic Lines

A new plastic traffic marking compound is said to dry within 30 sec after application, outlast paint five-to-one and be more economical than either paint or inlaid marking discs.

Tests of the new compound, marketed under the trade name Veon, have been carried on for five months with the cooperation of the New York City Department of Traffic. Since September 13, 1954 some 1,500,000 vehicles and several million pedes-

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- Contains no lime, clay or other extenders added solely for bulk or weight

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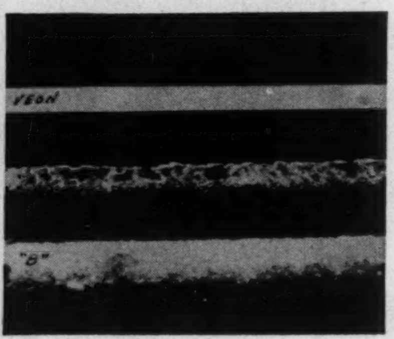


VEON (top line) after five months is in better shape than two painted lines.

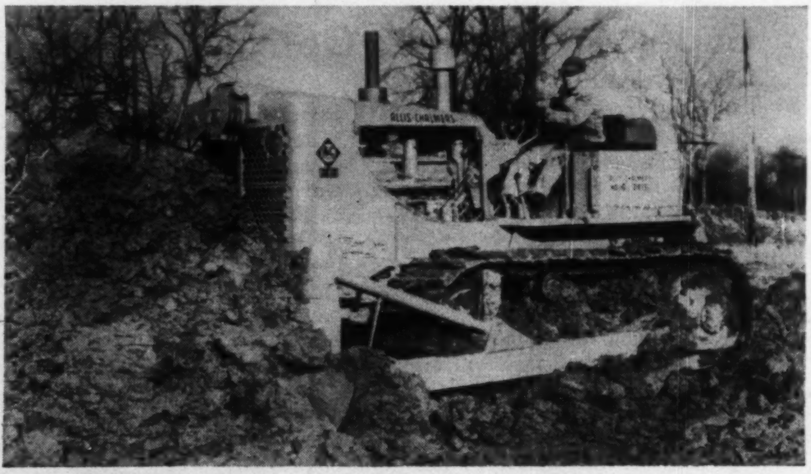
trians have rolled and scuffed their way over crosswalk markings of Veon and of two grades of paint applied in closely parallel lines across Fifth Avenue, at crosswalks north and south of 42nd Street. As of February 15, according to a report from an independent testing company, one pair of the painted lines was virtually obliterated, the second pair of painted lines no longer provided "effective cover" while the plastic line is still intact, save for slight abrasion at the edges.

Durability was but one of three advantages reported for the new compound. Rapidity of application and freedom from traffic tieup is also cited. And further, the compound was dry to touch immediately after application. A vehicle driven over the marking within 15 sec after it was put down showed no evidence of pick-up on tires or smearing of the line.

Especially noted by the report was that the total time consumed in application of two Veon lines was 30 min as compared with three hours required to apply one pair of painted lines and two hours for the second pair of painted lines. Moreover, the Veon line was laid down in one continuous strip by a two-man crew with a no resultant traffic tie-up during its application. The painted lines required a five-man crew and necessitated the halting of traffic in alternate lanes as they were laid down in three successive strips.

The new compound also is said to have placed first for economy as against two materials most commonly in use for crosswalk markings, according to figures prepared by the New York City Traffic Department. On the basis of markings for 8,000 30-ft crosswalks and their maintenance for three years, Veon's cost was $224,000 as compared with $366,480 for painted lines and $354,640 for disc markings. Broadway Maintenance Corp., 22-09 Bridge Plaza N., Long Island City, N. Y.

(New Products continued on page 60)



Allis-Chalmers' HD-16 Makes Its Bow

Less than a month after the introduction of the new HD-21, Allis-Chalmers is introducing the HD-16—a 31,500-lb crawler that develops a 31,700-lb drawbar pull with standard transmission. This is in contrast to the older HD-15 which weighs 27,850 lb and has a drawbar pull of 29,400 lb. A torque converter model is powered by a diesel developing 150 net engine hp at 1,800 rpm. When the tractor is equipped with standard transmission, rated engine speed is 1,600 rpm and net engine output is consequently reduced to 140 hp. This compares with 135 net engine hp on both torque converter and standard transmission models of the HD-15. Features of the HD-16 include a wrap-around radiator guard that tilts forward and down for easy accessibility. This guard design is said to reduce the cost of tractor-dozer packages because the hydraulic rams or cable-lift sheaves mount directly on it. A separate dozer lift frame is eliminated. Allis-Chalmers Mfg. Co., Tractor Div., Milwaukee 1.

ON THE NEWS FRONT WITH STRUCTURAL STEEL

Coliseum—Circuses, rodeos, ice shows, and basketball games will soon play beneath one of the world's largest structural steel domes, now under construction at Charlotte, N. C., and expected to be completed early this year. The coliseum will have a capacity of 10,000 permanent and 3,000 temporary seats, together with large open space for exhibitions and conventions. Aisles and passageways are designed so that the building can be emptied in four minutes.

1,000 tons of Bethlehem structural shapes were used in building the coliseum. The 160-ft-long ribs, pre-assembled on the ground into seven 22-ft 6-in. sections, were erected with crawler cranes and supported temporarily by a center tower which was removed after the entire roof frame was in place. A steel tension ring 332 ft in diameter, resting on columns, absorbs the tensile stresses of the dome.

Near the coliseum is an auditorium designed for theater and concert presentations. The auditorium, seating 2,500 people and with a 100 by 50-ft stage, has a framework built of 300 tons of Bethlehem structural shapes.

Architects for the coliseum and auditorium were A. G. Odell, Jr., and Associates of Charlotte, N. C. *Structural Engineers:* Severud, Elstad and Kruеger, New York City; *General Contractor:* Thompson and Street Co., Charlotte; *Steel Fabricator and Erector:* Southern Engineering Co., also of Charlotte.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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- Wind Tunnels
- Crane Bridge Girders
- Trolley Frames and Trucks
- Rigid Frames
- Roll-Over Fixtures
- Tank Turrets
- Gun Mounts
- Heavy Truck Bodies
- Engine Frames and Bases
- Crawler Frames
- Press Platens and Beds
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  Roller Gates
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  Taintor Valves
  Protection Angles

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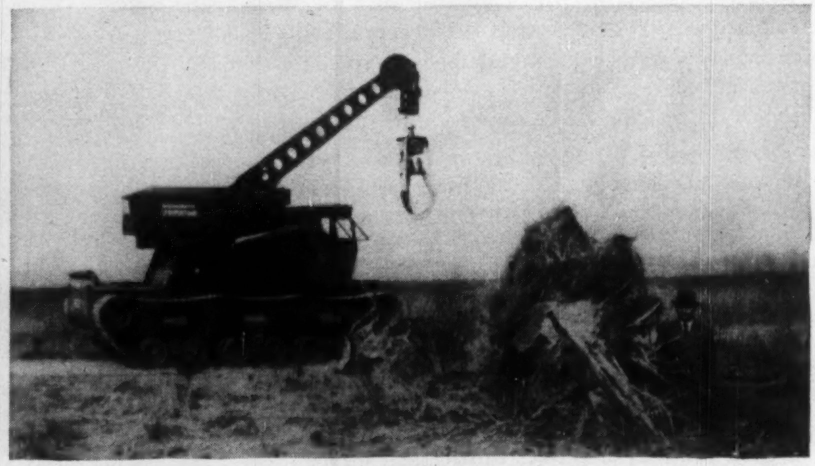
DETROIT 34, MICHIGAN
MAHON

Concrete Vibrator Has Multiple Uses

When is a vibrator not a vibrator? When it's also a grinder, wire brush, sander, polisher, drill, and pump.

The Mall Model 14GV23 is a 6-hp vibrator with 7,000 to 10,000-rpm head speeds. By removing the head, reducing the shafting to the desired length and adding an adapter shaft, housing and spindle it can be used for a variety of jobs. Among them are: dry grinding or wet rubbing concrete; grinding metal or terrazo; sanding or polishing metal or wood; and drilling in wood, metal or concrete. By replacing the spindle with a sump pump, the power unit can be converted to handle 4,500 gph with a 25-ft head. A range of speeds at full power is available.

The power unit can be either a Wis-

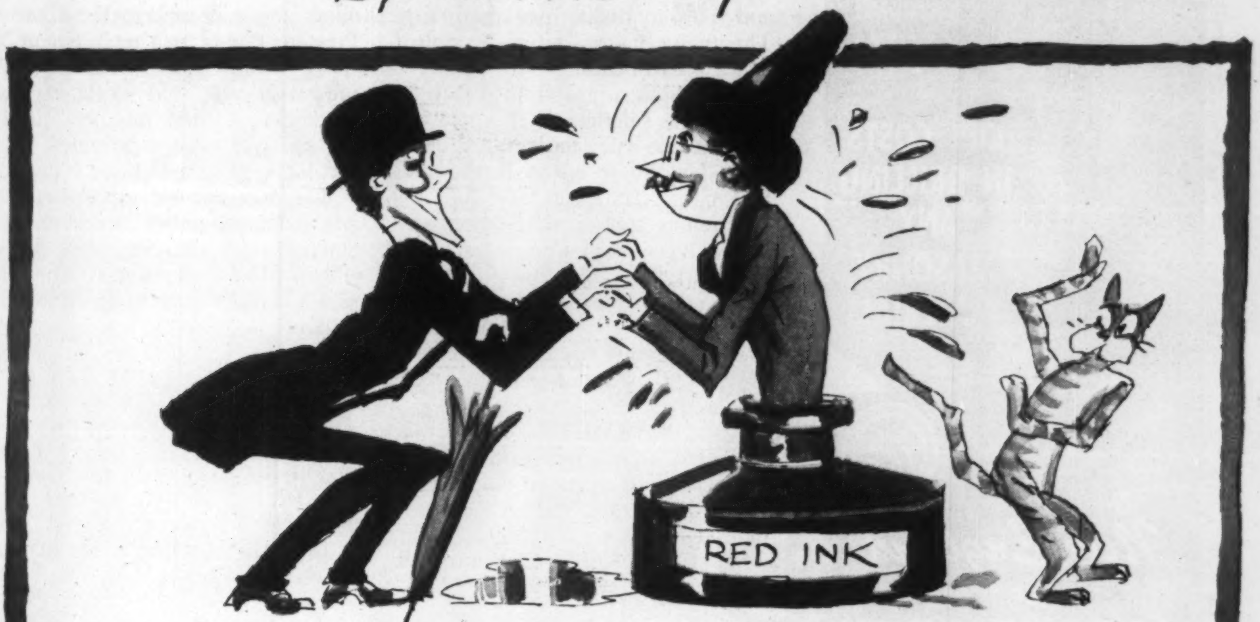


Stumper From Behind the Iron Curtain

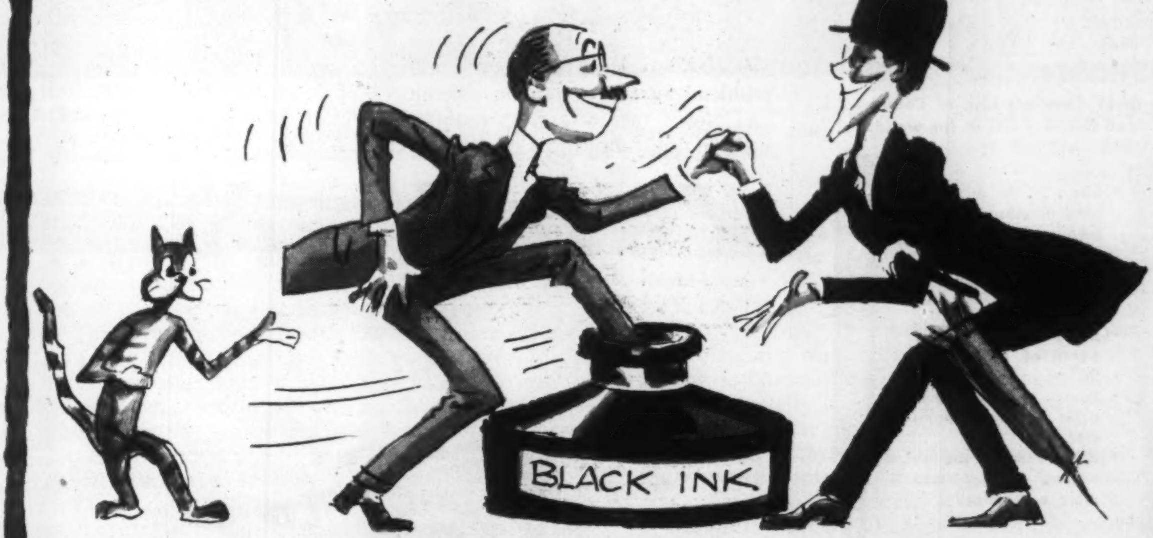
Looking something like a boondoggled light tank, this East German machine is said to remove a 2-ft dia tree stump in 6 min with a two man crew. Extensible ripper teeth on the front of the machine cut lateral roots and loosen the soil, then the grab removes the stump. The 18-ton crawler has a top speed of 5.7 mph.

CONTRACTORS SAVED FROM RED MENACE!

By Mr. Friendly



In case after case American Mutual Safety Engineers have helped contractors *stay out of the red* by showing them how to cut accidents to way below average.



This service reduces job costs and insurance premiums and can help put a company firmly *in the black.* In 4 years, for example, The Kansas City Structural Steel Company saved $68,884. Documented case histories of savings like this are reported regularly in this magazine. Watch for them . . . find out how American Mutual helps contractors prevent accidents.

P.S. If you're interested in this money-saving service, write today for your free copy of "Foremanship and Accident Prevention in Construction." American Mutual Liability Insurance Company, Department O-136, 142 Berkeley Street, Boston 16, Massachusetts.

AMERICAN MUTUAL

Service from salaried representatives in 78 offices!
Savings from regular substantial dividends!

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consin or Briggs & Stratton gasoline engine that is run at 3,600 rpm. A two step pulley is available in two types—1,200 to 7,000 rpm speed range and 1,800 to 10,000 rpm speed range. The engine has an automatic centrifugal clutch for idling.

Shafting is supplied in 7-ft interchangeable lengths and it is said that the machine will handle three, four or more lengths at once. If the shaft housing is damaged, only the nonfunctioning section need be replaced.

Two types of mounting are available. For work on scaffolding or crowded areas a low, round base permits the engine to swivel through a full circle. A wheelbarrow mounting provides greater portability in areas where space is not so confined.

The 14GV23 retails at $440 as a 7,000 rpm unit and $438 as a 10,000 rpm unit when mounted on the round base. Prices on the wheelbarrow-mounted units are $30 higher. MALL TOOL CO., 7725 S. CHICAGO AVE., CHICAGO 19, ILL.

Multiple Branch Tees Can Solve Many Header Problems

A multiple branch tee with integral extruded outlets could prove to be a solution to many header problems in the petroleum, chemical and power fields, and can also be used in the fabrication of piping for air conditioning and radiant heating systems.

The multiple branch tee is available in all commercial metals and alloys and conforms to the Code for Pressure Piping area replacement formula. The new product is tailored to individual jobs, that is, its size, wall thickness and the number and size of the outlets are determined by individual service conditions.

The tees can be especially useful where branch outlets are appreciably smaller than the run pipe. TUBE TURNS DIV., NATIONAL CYLINDER GAS CO., 224 E. B'WAY, LOUISVILLE 1, KY.

Rotating Top Makes Screw Driver Easier to Handle

The Roto-Top screw driver features a handle top that remains fixed in the heel of the hand as the screw driver is turned. According to the manufacturer, the Roto-Top minimizes fatigue, screws faster, and with greater ease.

The screw drivers are professional tools, made of alloy steel, hardened to its full length. Fluted handles are of shock-proof tenite. Set includes three regulars, with 4, 5 and 6-in. blades, and two Phillips head with 3 and 4½-in. blades. Price is $3.95 ppd. for set of 5; or $2.60 for set of 3 regulars. TIME MFG. CO., DEPT. 330, WESTMINSTER, MASS.

CAPTAIN BILL

Mackinac's Workboats In Production

Among the pieces of construction equipment used on the Mackinac Bridge were seven Sea-Trucks—all-welded steel workboats—whose design proved to be successful enough to warrant large scale production of the craft. Constructed of 3/16-in. steel plate and powered by a diesel engine, the boats measure 40 ft in length with a 12-ft beam. According to the manufacturer, they are light enough to be handled by a medium-sized crane and can be transported by trailer or truck. Hans Hansen Welding Co., Inc., 318 Washington St., Toledo 4, Ohio.

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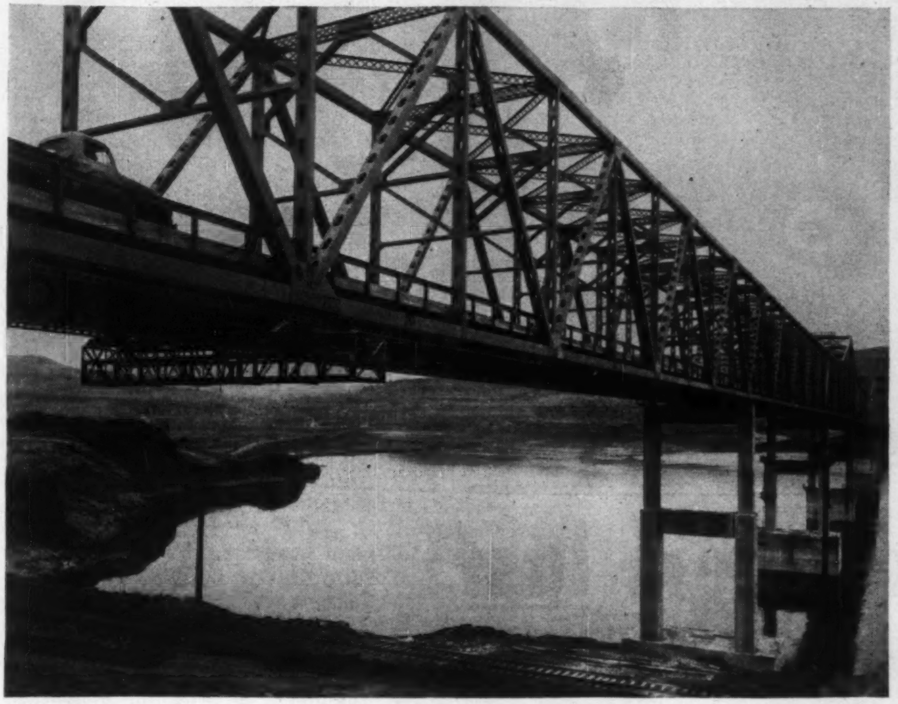
Tramrail CUTS Bridge Building Costs

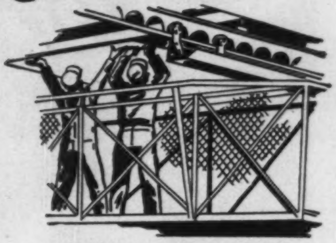
1. SAVES *Construction Time*

2. SPEEDS *Inspection and Painting*

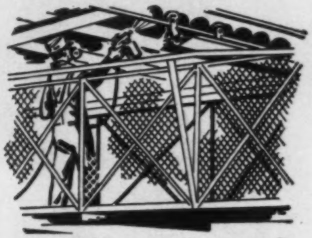
3. SIMPLIFIES *Maintenance*



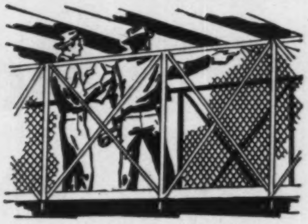
Dalles Bridge over Columbia River between Washington and Oregon. Equipped with a Cleveland Tramrail System including six traveling service platforms operating between piers. The platforms are 36'-6" long and extend beyond the bridge sides.



CUTS concrete form erection time.



SAVES many hours of painting time.



MAKES bridge inspection a simple, easy job.

A CLEVELAND Tramrail Bridge Servicing System can effect such large savings in bridge construction that no bridge builder can afford to overlook this latest development.

The Tramrail installation on the Dalles Bridge over the Columbia River is a good example of this. The equipment was included in the original design. By erecting it in the early stages of construction, the bridge builder was able to pay himself a handsome "bonus" resulting from the efficiency that it brought about.

The equipment made possible savings in several ways. It drastically reduced man-hours required for setting bridge deck forms prior to pouring the concrete. It speeded assembly of many structural members. It simplified placing of electric conduits. It aided bridge inspection and saved a large amount of painting time.

The Tramrail continues to be an important cost-reducing and safety factor now that the bridge is completed. Periodical inspections can be made easily and quickly. Any maintenance underneath can readily be taken care of. Painting and sandblast equipment can be stored on the service platform, making the work easier and, of course, less costly.

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PUBLICATIONS

Porcelain panels–A 12-page brochure covers the subject of porcelain enamel panels—their use and advantages. Architect's details, showing installation of the company's panels in walls, sills and copings in various types of construction, are included. Cutaway drawings are accompanied with specifications.—DAVIDSON ENAMEL PRODUCTS, INC., 1109 E. KIBBY ST., LIMA, OHIO.

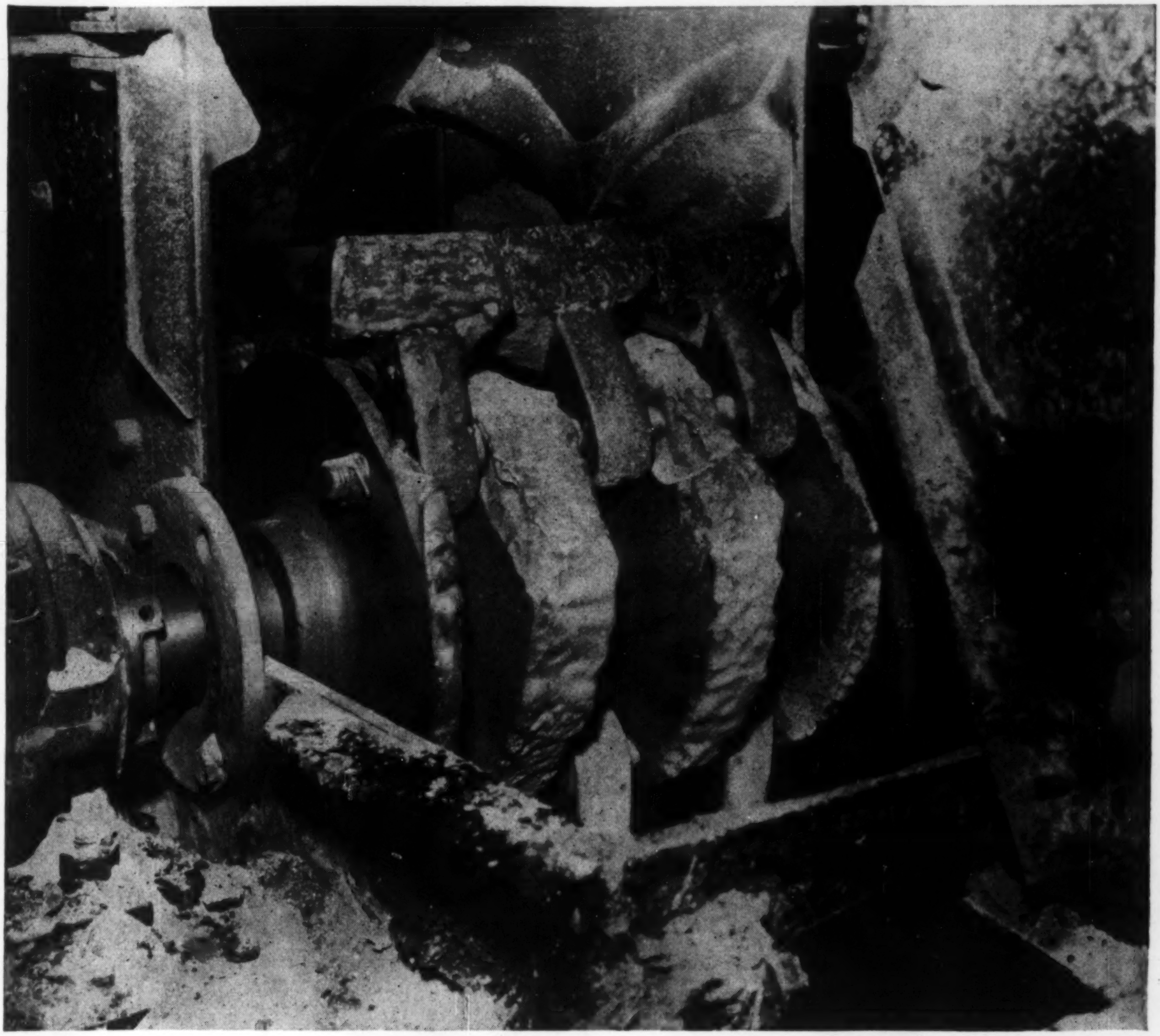
Incineration plants – Incineration plants for the municipality is the subject of a new 24-page brochure which includes descriptive data on the various types of plants offered by the company. Including more than 40 photographs, engineering drawings and sectional views, the brochure presents data on sludge incineration and modernized or enlarged plants. Bulletin No. 601-55. — PITTSBURGH-DES MOINES STEEL CO., NEVILLE ISLAND, PITTSBURGH 25, PA.

Steam heating – A capsule "refresher course" in the use and specification of steam for heating has been published in the form of a 16-page booklet, "What You Should Know About Modern Steam Heating." The booklet attempts to give heating system designers a source of information that will make them evaluate steam as a heating medium for specific types of installation. A section of the book includes a checklist guide for a designer to follow in specifying a heating system with steam. The specifications cover 33 points in the system from general conditions to final tests and guarantee. — STEAM HEATING MFRS. ASSN., 450 E. OHIO, CHICAGO 11, ILL.

Lubricating oils–The development of more efficient lubricating oils to get more years of reliable service from diesel engines is related in a new booklet "Let Your Diesel Live." The booklet contains the story of lubricating oils and how these oils affect the present owner or prospective purchaser of one of the manufacturers' engines. — CATERPILLAR TRACTOR CO., PEORIA, ILL.

Metal lathing and furring–A booklet entitled "Specifications for Metal Lathing and Furring" covers many types of metal lath construction. Included are specifications for solid and hollow partitions, wall furring, metal lath attached directly to wood supports, contact ceilings, furred ceilings, suspended ceilings, beam and column

(*Continued on page 69*)



The periphery of the hammer mill rotor discs pictured here is regularly maintained with Coated Tube Stoodite, a high alloy electrode providing extreme wear resistance.

HOW TO GET MORE FROM YOUR HAMMER MILLS

Crushing decomposed rock and clay to produce material for wet-finished brick is a rough job and mighty tough on mill hammers. The Chattahoochee Brick Company in Chattahoochee, Georgia, has established a maintenance procedure that is producing more material at considerably lower cost by the use of Stoody alloys.

The raw material is dry-crushed in a pair of double rotor hammer mills. The problem, as usual, is to maintain the corners on hammers and keep them out to size as long as possible. The corners and edges of the hammer are, of course, subjected to severe impact and abrasion. At Chattahoochee Brick Company *new* manganese hammers are capped with an overlay of Stoody 21. As corners become rounded and the efficiency of the mill drops off, the hammers are pulled and turned over to the weldor for rebuilding.

Worn hammers as shown in the illustration are brought back to size with Stoody Manganese and the entire wearing area is hard-faced with Stoody 21. Records show that some hammers have been rebuilt and returned to service as much as 20 times. Thus the hard-facing program shows a remarkable saving in replacements as well as in downtime, and produces a greater volume of usable, properly sized particles.

Your Stoody dealer would be glad to advise you on the maintenance of your crushers and other heavy equipment subject to costly wear. Check the yellow pages of your telephone book or write to the company for complete descriptive literature.

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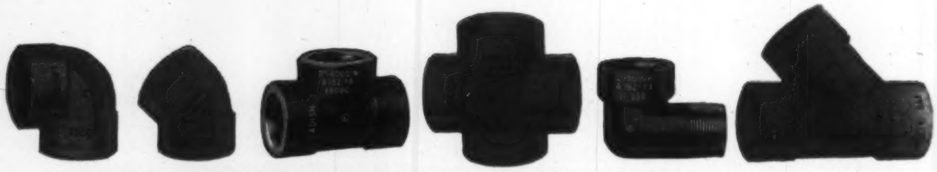
- Carbon Steels
- Carbon-Molybdenum Steels
- Chromium-Molybdenum Steels
- Nickel Steels
- Chromium-Nickel Steels
- Chromium-Silicon-Molybdenum
- Wrought Iron
- Chromium Type Stainless
- Chromium-Nickel Stainless
- Molybdenum Type Stainless
- Wrought Aluminum
- Aluminum-Copper Alloys

BUTT WELDING FITTINGS

½ inch through 42 inches . . .

FORGED CORROSION RESISTANT—LIGHT WEIGHT and A.S.A. FLANGES

½ inch through 24 inches . . .



FORGED SCREWED OR SOCKET WELDING FITTINGS and UNIONS

⅛ inch through 4 inches . . .

LARGE DIAMETER AND T.E.M.A.* STANDARD FLANGES up to 20 feet O.D.

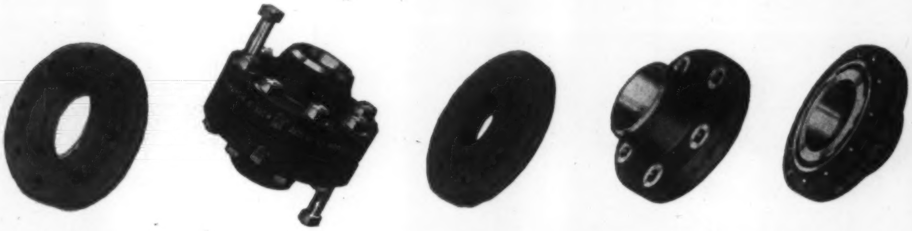
LONG WELDING NECKS up to 24 inches, 150 lb. through 2500 lb.

*Tubular Exchanger Manufacturers Association

Complete Service . . .

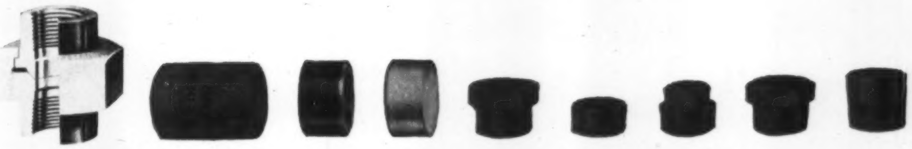
BUTT WELDING FITTINGS

Schedules 5S, 10S, 40S, 80S, and other Schedules and wall thickness.



FORGED CORROSION RESISTANT—LIGHT WEIGHT and A.S.A. FLANGES

150 lb. through 2500 lb. pressure ratings.



FORGED SCREWED OR SOCKET WELDING FITTINGS and UNIONS

150 lb. Corrosion Resistant and 2000 lb. through 6000 lb. ratings.

FOR FITTINGS FROM ANY FORGEABLE MATERIAL TO MEET YOUR SERVICE REQUIREMENTS

You get prompt, efficient service when you specify and order from the complete Ladish Controlled Quality line. Fittings *in any forgeable material* in virtually every type, size, wall thickness or pressure rating . . . are produced to one uncompromising Controlled Quality standard . . . and identified with heat code symbols pioneered by Ladish as verification of metallurgical integrity resulting from exhaustive tests made in the Ladish metallurgical laboratories.

For *complete service* on your fittings requirements, depend on the Ladish line and the services of your Authorized Ladish Distributor.

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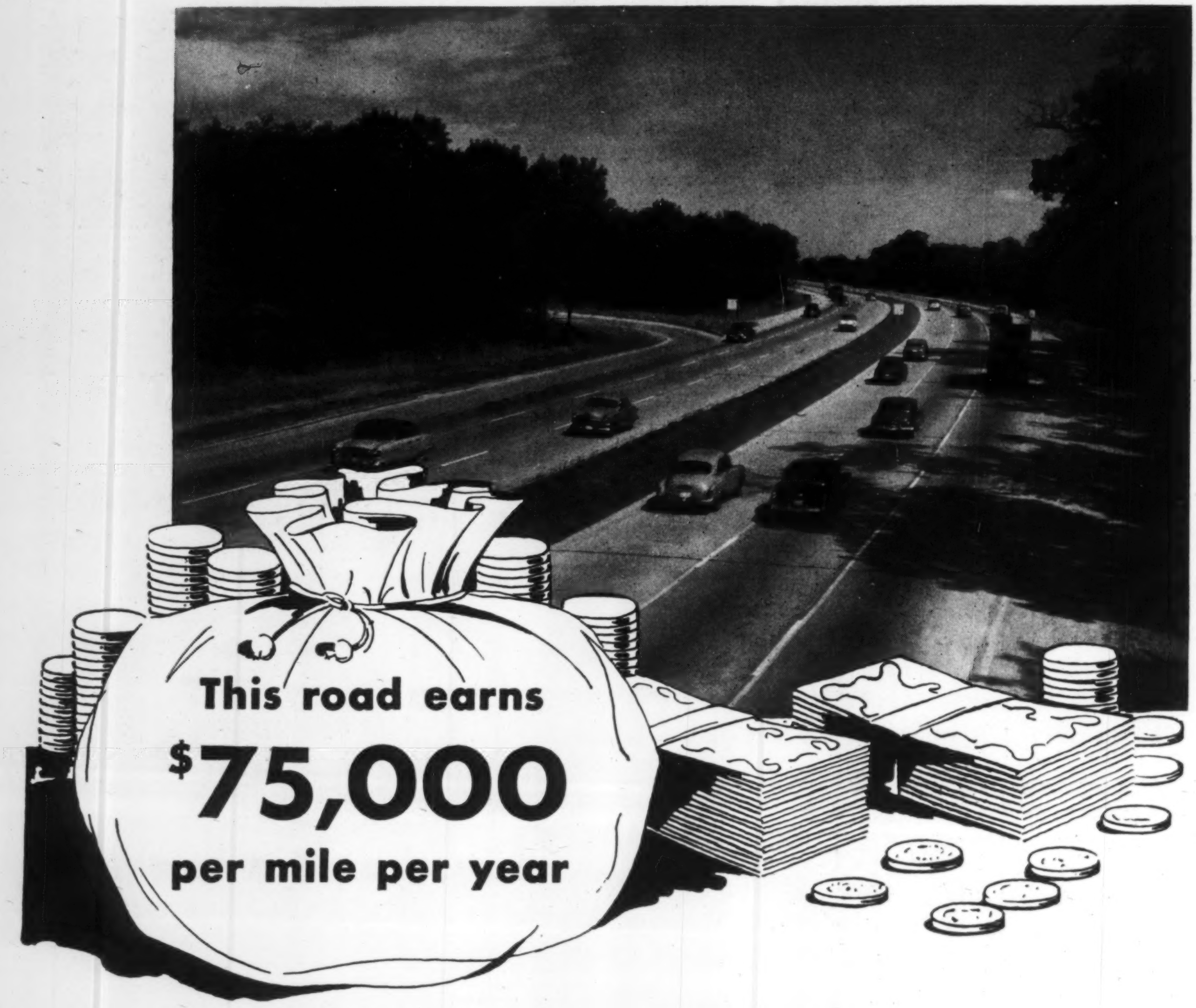
- **Deoxidized Copper**
- **Hastelloy**
- **Titanium**
- **Forging Brass**
- **Everdur Bronze**
- **Silicon Bronze**
- **Manganese Bronze**
- **Wrought Nickel**
- **Nickel-Copper Alloys**
- **Inconel**
- **Monel**

*Tubular Exchanger Manufacturers Association



A road earning money? Absolutely! Every road earns money in the form of gas taxes and license fees paid by drivers using it. The more vehicle miles of traffic a road handles the more money it earns.

The road pictured is Edens Expressway north of Chicago. It carries a daily average of 28,000 vehicles, many of them commercial. Here's how the earnings of this concrete road are computed:

Vehicles traveling this road per day	28,000
Times average vehicle tax per mile in Ill.	$ .0073
Equals earnings per day per mile	$204.40
Times number of days a year	365
Equals annual earnings per mile	$74,606
Minus the annual cost to build and maintain such a road during its lifetime	$15,000
Equals annual profit earned per mile	$59,606

Similar analyses elsewhere show that concrete roads earn the most "profit." That's because they attract the most traffic and have the longest life.

For example, concrete carries the load on 92% of the pavement of the 25 most heavily traveled rural road sections in America. And official studies reveal that concrete has at least twice the life expectancy of the next most commonly built pavement.

Concrete roads usually earn *more* than they cost to build and maintain. The "profit" pays for additional miles of new highways. In contrast, other commonly built pavements have such a relatively short life and require such frequent and expensive maintenance that they earn *less* than they cost to build and maintain. Thus they drain an increasing amount from available funds for maintenance, leaving a decreasing amount for building critically needed new mileage.

Highway users expect engineers and public officials to invest their money in roads paying the best dividends. That means paving all main roads with concrete, the self-supporting, profit-making pavement.

For more information about designing and constructing low-annual-cost, high-earning-capacity concrete highways, write today for free literature, which is distributed only in the United States and Canada.

PORTLAND CEMENT ASSOCIATION Dept. A4a-17, 33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work protection for fireproofing and reinforcing for exterior stucco.—METAL LATH MFRS. ASSN., ENGINEERS BLDG., CLEVELAND 14, OHIO.

Portland cement–A booklet for contractors, engineers and architects contains information on the uses, applications and specifications of portland cements, waterproofings, and tile grout cement. The 26-page pocket size booklet is designed to be used as a tool for those concerned with either the specification or actual use of the various types of portland cements. Ten tables in the back of the manual can be of help to the contractor and architect in figuring quantities of cement and aggregates required for various types of work. "Medusa Cements Manual."—MEDUSA PORTLAND CEMENT CO., 1000 MIDLAND BLDG., CLEVELAND 15.

Super refractories–A 24-page booklet gives the physical and chemical properties on Carborundum super refractories. The data is assembled to make the information easy to find and is augmented by lists of applications together with pertinent charts and tables. —THE CARBORUNDUM CO., REFRACTORIES DIV., PERTH AMBOY, N. J.

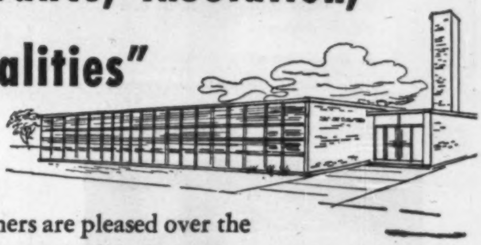
Steel buildings–A 24-page manual–SX-2054—on steel buildings covers Series S, Type 1, Type 2, and Type 3 buildings; multiple-span buildings; and leanto units. Accessories are described and illustrated and instructions for erection and finishing are included. — PRODUCT INFORMATION SERVICE, ARMCO DRAINAGE & METAL PRODUCTS, INC., MIDDLETOWN, OHIO.

American standards–A list of American standards, 1955 edition, is a 48-page publication listing and indexing about 1,500 American standards. Included are 210 for construction and civil engineering, 272 electrical, 32 drawings, letter symbols and abbreviations, and a miscellany of others.—AMERICAN STANDARDS ASSN., 70 E. 45TH ST., NEW YORK 17, N. Y.

Bitumuls and base construction–"Bitumuls for Base Construction" is the title of a 12-page booklet discussing the use of bitumuls emulsified asphalt and the unique advantages it provides in this phase of pavement construction. Beginning with a description of bitumuls, it follows step by step the preparation and placement of mixes. The text is illustrated with charts and photographs detailing various construction methods and equipment used in each. — AMERICAN BITUMULS & ASPHALT CO., 200 BUSH ST., SAN FRANCISCO 4, CALIF.

Architects: Diehl and Diehl, Verne H. Sidnam, Associate.
Detroit, Our Lady of Victory School

"Happy over 9-value Tectum® deck's appearance, insulation, acoustical qualities"



Architect, builder, and owners are pleased over the "great economy of Tectum as a roof deck, serving also as decorative textured ceiling, with high insulating and acoustical values" in Our Lady of Victory Parish School, Detroit.

Tectum tile 1¾" thick was used on exposed beams throughout this modern one-story building. Its other values — structural strength, stability, resistance to fungus and rot — will keep maintenance at a minimum for the years ahead. Noncombustible Tectum reduces both fire hazards and insurance rates. Only Tectum offers so many qualities in one quality product.

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The Alliance Manufacturing Company
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TECTUM DIV.
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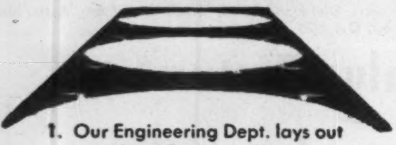

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2. A shop drawing showing layout of sizes, shape and cut-outs for obstructions is submitted for approval before fabrication.

3. Each panel is carefully checked by our inspectors before shipment and is clearly marked for quick installation.
4. We furnish erection drawings showing location of marked panels.

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MEN AND JOBS

Admiral Kirby Smith Retires As Raymond Executive

Rear Admiral Kirby Smith, CEC, USN (Ret.), director and vice president in charge of domestic sales, has retired from Raymond Concrete Pile Co., with which he has been associated for 25 years.

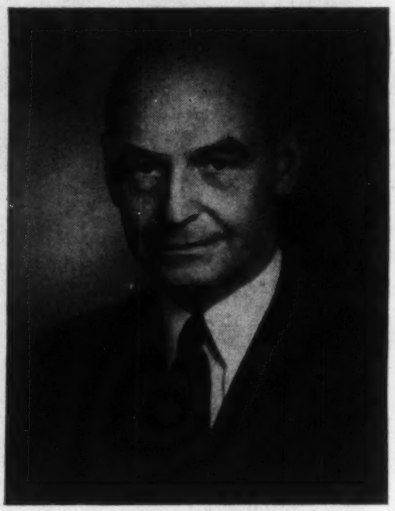
A 1906 graduate of the U. S. Naval Academy at Annapolis, Admiral Smith was transferred to the Civil Engineer Corps in 1907 and received a civil engineering degree from Rensselaer Polytechnic Institute in 1910. After serving as public works director at various naval stations, he was assigned to the Bureau of Yards and Docks, supervising construction of such projects as the helium plant in Fort Worth, Texas, and the naval aircraft factory in Philadelphia, Pa.

Admiral Smith resigned from the Navy in 1920 and joined the Newport Shipbuilding Co., Wilmington, N. C., as general manager. He later moved to Asher Fire Proofing Co., Cleveland, Ohio, as manager and in 1925 joined Raymond Concrete Pile Co., serving as its manager in Venezuela and subsequently in Washington, D. C.

Recalled to active duty in 1942, Admiral Smith was again assigned to the Bureau of Yards and Docks and was appointed director of its construction department in 1943. In that capacity he had charge of the navy's multi-billion-dollar construction program in the United States, Hawaiian Islands and the Canal Zone.

Following his retirement from the Navy in 1945, Admiral Smith was appointed deputy expediter for the Veterans Emergency Housing Program, a post he resigned in 1946 to return to Raymond Concrete Pile Co.

Adm. Kirby Smith



L. L. Youell

Leonard L. Youell Heads Stone & Webster, Canada

Leonard L. Youell has been appointed vice president and general manager of Stone & Webster Canada Limited, with headquarters in Toronto.

He joined Stone & Webster Engineering Corporation in 1945 and served for five years as its engineering representative in Canada. When Stone & Webster Canada Limited was formed in 1950, Youell became manager of its principal office in Toronto.

Born in Canada, Youell was educated at the University of Toronto and spent the first six years of his career in engineering work in Canada, including one year with the Hydro Electric Power Commission of Ontario. In 1926, he joined the Atmospheric Nitrogen Corporation, later known as the Nitrogen Division of The Solvay Process Co., and remained with it as steam engineer until he became associated with Stone & Webster.

Ontario-Hydro Realigns Duties of Top Command

The Hydro-Electric Power Commission of Ontario, now engaged in construction of the St. Lawrence power project, has reorganized its management and engineering groups to permit a more effective flow of executive functions.

In the new organization, A. W. Manby, general manager, is responsible for overall administration of OHEPC affairs. Otto Holden, chief engineer, becomes directly responsi-

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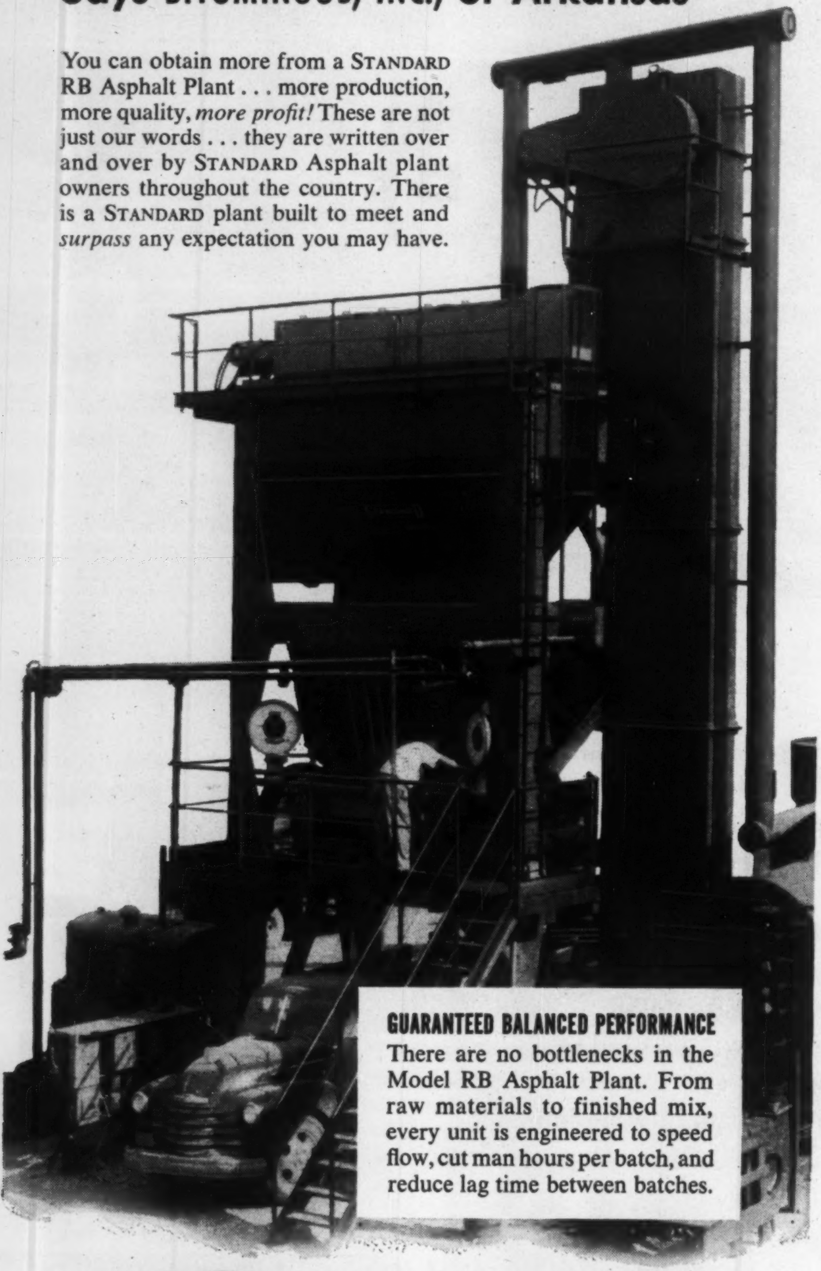
"has exceeded our expectations"
Says BITUMINOUS, INC., of Arkansas

You can obtain more from a STANDARD RB Asphalt Plant . . . more production, more quality, *more profit!* These are not just our words . . . they are written over and over by STANDARD Asphalt plant owners throughout the country. There is a STANDARD plant built to meet and *surpass* any expectation you may have.



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ble to the commission for completion of the St. Lawrence and Niagara power projects. Under him are Gordon Mitchell, director of the St. Lawrence power project, and W. L. Fraser, project manager for the Niagara generating station.

Four assistant general managers, reporting to the general manager, have been appointed as part of the reorganization. Those named to the new posts and their areas of responsibility are:

- George D. Floyd, engineering. A former director of the planning division, he becomes responsible for the planning, engineering, construction and research divisions.
- J. Mervyn Hambley, administration. His new responsibilities include operations and consumer service. After serving for two years as district operating engineer, Hambley was named director of operations in 1947.
- E. Harold Banks, financial. With the title of assistant general manager and comptroller, his responsibilities include treasury, accounting, supply and property.
- John Dibblee, personnel. He is now president of the new Labour Relations Association St. Lawrence Power Project and served as chief engineer for operations before his appointment as manager of personnel.

Men and Jobs Briefs . . .

• **Careers**—The Pennsylvania Secretary of Highways appoints **Robert A. Farley,** Army construction engineer, as assistant chief highway engineer in charge of maintenance . . . **Phillip M. Stephenson** is promoted to bridge engineer in the Oregon State Highway Department . . . **Glenn A. Goldsmith,** Milwaukee engineer, becomes public works director at Rhinelander, Wis.

• **Business**—**Edward J. Mahoney,** formerly head of Mahoney Contracting Co., Lansing, Mich., joins Bechtel International Corp. and Compania Bechtel, S.A. as vice president . . . **N. T. Franklin** is appointed vice president of Harrison Construction Co., Pittsburgh, with which he's been associated since 1931 . . . **Anton Tedesko,** manager of the structural department, moves from the Chicago to the New York office of Roberts and Schaefer Co., engineers.

W. M. Stephens is promoted to acting superintendent of construction by Texas Eastern Transmission Corp. **Robert F. Borg** and **Jacques Kreisler, Jr.,** form Kreisler-Borg Construction Co., general contracting and heavy construction firm, White Plains, N. Y.

OBITUARIES

Christian G. Norman, 87, chairman emeritus of the Building Trades Employers' Association of New York City, died March 16. Norman, who was active in the building industry for more than 60 years, was one of the founders of the BTEA in 1903 and served as the first permanent board chairman from 1921 to 1948. A master plumber, he became a builder in 1890 and erected the first fireproof commercial building in New York City. In 1896 he developed a fireproof partition, which he manufactured. At the time of his retirement as a contractor in 1920 he was associated with Norman-Seton, Inc.

Frank Corasaniti, 71, president and founder of Arundel Construction Co., Inc., in Baltimore, died March 10. Born in Italy, he came to the U. S. at the age of 16 and began his career as a laborer in Philadelphia. A few years later he went to Baltimore as foreman on a construction project and stayed to form his own corporation in 1912.

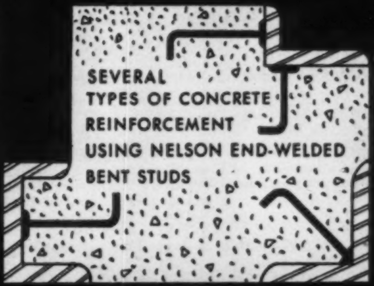
John K. Flick, 70, roadbuilding civil engineer, died March 19 in San Jose, Costa Rica. From 1931 until retirement last November he worked for the U. S. Bureau of Public Roads on construction of the Inter-American Highway in Costa Rica and Panama. Earlier in his career he helped build the Madeira-Mamore Railway through Brazilian jungles and served as an engineer for the Guantanamo (Cuba) Electric Co. Before starting Central American highway work he was associated with the Baltimore & Ohio Railroad, the Bolivian National Railways, the Baltimore water department. He also was a contractor for 12 years in Sudlersville, Md.

Guy Shrum, 78, civil engineer, architect, and Washington County (Ind.) surveyor since 1948, died March 17 in Salem, Ind. He went to San Francisco after the 1906 earthquake to study the effect of earthquakes on various building materials. Later he was superintendent of construction on such buildings as the Salem public library and the Jefferson County Armory in Louisville, Ky. He also designed the State Capitol dome at Springfield, Ill.

Malcolm B. Ross, 61, for over 33 years a civil engineer with the department of streets and engineering at Springfield, Mass., died March 16. He was a 1913 graduate of Yale University and had served in World War I with the 101st Engineers.

"STUD" NELSON END WELDS
CONCRETE ANCHORS
IN A FLASH!

Now, for the first time, you can specify *standards* in concrete anchors. NELSON bent studs in four basic sizes take care of practically any specification on concrete anchors for buildings, bridges, dams and other concrete structures. Informed engineers and contractors convert NELSON anchors into lower costs and improved construction. Stud welding with a NELSON gun is five times faster than hand welding . . . the weld is always strong and positive . . . there's never any distortion of angles or channels.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MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents
May Materials, and Labor Prices, will appear in May 5, 1955 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots cash, dis. not deducted			SAND AND GRAVEL Per ton, carload lots			CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block		CONCRETE Ready Mixed 1:2:4: over.
	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. agg.	50 c.y., del.
Atlanta	$3.97a	$3.56a	$3.40	$2.75	$2.75	$2.50‡	$2.14	$2.24	$1.45	$1.65	$0.18	$0.195	$12.25g
Baltimore	4.16a	3.75a	3.63	2.60‡a	2.60‡a	2.00‡a	2.75‡a	2.80‡a	2.65‡a	2.60‡a	.18	.18a	12.15
Birmingham	3.72	2.75e	....	2.53n	2.53n	2.08n	2.75	2.75	1.35	1.55	.165	.165	11.00
Boston	4.47b	4.11b	4.06	2.50a	2.50a	2.50a	1.50a	1.60a	.....	.....	.235	.265a	12.50h
Chicago	3.73a	3.32a	3:35	3.25‡b	3.25‡b	3.65‡b	3.50‡b	3.50‡b	2.25‡	2.25‡	.23	.23b	12.00j
Cincinnati	3.95c	3.55c	3.63	2.19‡c	2.24‡c	2.24‡c	2.54‡c	2.54‡c	.....	.....	.18	.225a	10.95
Cleveland	N. A. in C. L.	3.34e	....	2.05ef	1.85f	1.65	4.10‡a	4.10‡a	3.35‡	3.15‡	......	.22	14.40d
Dallas	3.15a	2.85a	2.93	2.18	2.28	1.84	2.22	2.38	.....	.....	.11e	.2675	9.40
Denver	4.24a	3.94a	4.24	1.85	2.00	1.20	....	....	.....	.....	.23	.255a	10.50
Detroit	3.72a	3.20a	3.50	4.50‡b	4.50‡b	4.00‡b	3.75‡	3.75‡	4.25‡	4.25‡	.21	.21a	12.70
Kansas City	4.10b	3.90b	3.90	.....	.....	2.00‡a	2.00‡a	2.00‡a	.....	.....	.20a	.24c	12.50b
Los Angeles	4.72ch	[illegible].26ch	5.20	2.21a	2.41a	2.21a	2.16a	2.26a	.....	.....	.135fm	.245m	11.88lh
Minneapolis	4.20a	3.79a	3.71	2.70‡ag	2.70‡ag	1.60‡ag	3.25‡ag	3.25‡ag	.....	.....	.19i	......	13.25fr
Montreal	3.11d	2.86d	....	2.20e	2.20e	2.25e	1.90i	2.20i	.....	.....	.17	.17a	10.80ab
New Orleans	3.50a	3.20a	3.48	2.44	2.44	2.00	....	....	1.45	1.65	.275	......	12.90
New York	4.26a	3.85a	3.63	2.85bk	2.85bk	1.90bk	2.70bl	2.70bl	.....	.....	......	......	14.65an
Philadelphia	3.73/4.12‡a	3.42/3.79‡a	3.58/3.63‡	2.85‡ep	2.85‡ep	2.35‡ep	2.45‡	2.55‡	2.00	2.35	.22/.26	......	13.20de
Pittsburgh	3.75a	3.56a	3.75	2.40‡	2.40‡	2.20‡	2.60‡	2.60‡	2.15	2.15	.25d	.31	14.00
St. Louis	3.70/3.93c	3.25/3.51c	3.55/3.72	3.10am	2.90am	2.30/2.90am	1.60j	1.70j	1.50	1.50	.22	.28ci	11.90
San Francisco	3.38c	3.39c	....	2.07	2.07	2.17	2.22	2.22	.....	.....	......	.31cl	12.15c
Seattle	4.80a	3.55a	5.95h	3.50‡bm	3.50‡bm	3.50‡bm	4.00‡bm	4.00‡bm	.....	.....	.225i	.315i	12.30l

‡ Delivered. * Prices incl. dealers discount except as noted.

CEMENT: *a* Less 10¢ disc, 15 days. *b* Less 2% disc, 15 days. *c* Less 10¢ disc, 10 days. *d* Truckload lots, deliv. 10¢ disc, 20 days. *e* Truckload lots, destination price. *h* LCL.

SAND GRAVEL, STONE & SLAG: *a* Truck lots. *b* Per cu. yd. *c* 5 tons or more. *e* ½". *f* Pea gravel. *g* Less 5% for cash. *h* Less than 5 tons. *i* Sales tax incl. *j* F.o.b. quarry. *k* Barge lots asd. *l* F.o.b. scow Hudson river. *m* Less 2% for cash. *n* F.o.b. cars. *o* 1–3 mi zone. *p* Add 10¢ for ea. add'l mi zone.

CONCRETE BLOCK: *a* Cinder. *b* Waylite. *c* Haydite. *d* Celocrete *e* 5¼ x 8 x 12 in. *f* 8 x 4 x 16. *g* F.o.b. truck at job. *i* Less 2% for cash Less 1% for cash. *l* F.o.b. plant San Rafael. *m* F.o.b. yard

READY MIXED CONCRETE: *a* 5 cu. yds. or over del. Man. *b* 25 cu. yds. or more. *c* 10–100 cy. brackets. *d* 1–3 mi. zone. *e* 2,000 lb comp. *f* 2500 lb. comp. *g* Less 25¢ disc, 15 days. *h* Less 50¢ for cash. *i* 5% off for cash. *j* 2% off for cash. *k* Federal tax included. Add 5% mun. & prov. *l* 1:2½:3. *m* F.o.b. yard. *n* Plus escalator clause. *o* Add 15¢ for ea. add'l 3-mi zone. *r* Includes 50¢ heating charge until 4/15/55.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10¢ per bbl. for payment within 15 days of date of invoice. Subject discount 10¢ per bbl. 20 days in Montreal.

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Clinchfield, Ga	2.90†	**Independence, Kan**	2.80†	**Leeds, Ala**	2.75†	**Saginaw, Mich**	2.90†	**Milwaukee, Wis**	3.05†
Kingsport, Tenn	2.90†	**Hannibal, Mo**	2.85†	**Duluth, Minn**	2.95†	**Wyandotte, Mich**	2.90†	**Green Bay, Wis**	3.05†
West Des Moines, Iowa	2.95†	**Northampton, Pa**	2.90†	**Hudson, N. Y**	2.75†	**Buffalo, N. Y**	3.00†	**Ironton, O**	2.90†
Nazareth, Pa	2.90†	**Universal, Pa**	2.95†	**Alpena, Mich**	2.80†	**Oswego, N. Y**	3.15†	**Montreal City**	2.56
Bath, Pa	2.90†	**Waco, Tex.** (+ 10¢ tax)	2.85†	**Detroit, Mich**	2.90†	**Cleveland, O**	2.95†	**W. Winfield, Pa**	3.00†

† *Prices to hold for second quarter of* 1955.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS—FLUXES Per gal., 80–300 penetration		CUTBACK ASPHALT MC Per ton		ROAD OIL	ASPHALT EMULSION RSI Per gal.	
	Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Per gal. Tank car	Tank car	Drums
Atlanta	......	......	.....	\$26.00	\$33.25	\$0.115^{O}	\$0.23^{O}	\$0.25^{OP}w	\$0.27^{OP}w	\$0.15	\$0.15	\$0.25
Baltimore	150.00‡	75.00‡	.....	21.00i	.....	.085i	0.175i	.09iw^{E}	.18iw^{E}	.09i	.095i	0.185i
Birmingham	.....	55.00i	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	.....	.....	.....	22.00a	23.00a	22.00av	22.00av	.09e^{F}	.....	.10a	.145a^{G}	.22a^{G}
Chicago	155.00‡	85.00‡b	3.45/3.55‡j	19.85b	29.85b	18.85bv	28.85bv	.094bw^{H}	.1740bw^{H}	.0725b	.....	.....
Cincinnati	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	200.00	73.00d	5.03g	23.00^{A}	.....	23.00^{A}	.....	.1025^{A}w^{F}	.....	.....	.1025^{AG}	.18^{AG}
Dallas	e	40.00	e	24.05	43.09	.1016	.2103	28.91	50.44	.098	.1087	.1960
Denver	.....	50.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit	.....	104.00	.....	27.21	.....	27.21v	.....	.1188w^{I}	.....	.0792	.....	.211
Kansas City	e	e	e	15.00cl	.....	17.50v	.....	.07ew^{J}	.....	.055c	0.11	.....
Los Angeles	e	.....	e	16.00dmx	.....	16.00dvx	.....	18.00dx^{K}	.....	17.00dv	.0825j	.1725j
Minneapolis	.....	.....	2.97h	23.70	.....	23.70	.....	0.10w	.....	0.10	.....	.....
Montreal	.....	e	e	27.00n	39.60n	.135n	.198n	16.50nu^{E}	20.90nu^{E}	.132n	.197ns	.289ns
New Orleans	.....	.....	.....	17.50e	....o	17.50ev	....o	.085ew	....o	.0825^{B}	.0825^{BL}	.....
New York	.....	.....	2.75f	23.89q^{CD}	44.32q^{D}	22.89vt^{CD}	43.57vt^{D}	.1023w^{CDF}	.1889w^{DF}	.....	.1023^{CD}	.1918^{D}
Philadelphia	175.00	110.00	4.06	22.00	.....	.....	.....	.09u^{F}	.....	.....	.....	.....
Pittsburgh	165.00	48.00	4.60	27.00	38.00	.10	.21	27.00^{E}	40.00^{E}	.098	.11	.224
St. Louis	.....	.....	.....	18.55f	.....	.1713	.....	.0865w^{M}	.....	0.155	.10	.....
San Francisco	.....	67.50e	.....	17.50g	33.00gp	17.50gkv	33.00gkv	20.00g^{N}	37.50g^{N}	18.75v	.085y	.....
Seattle	.....	.....	.....	17.50h	38.00h	17.25hv	.....	24.50^{K}	.....	19.75hv	.085h	.095hv

‡ Delivered.

PAVING BRICK & BLOCK: *a* CL. *b* 3 x 4 x 8. *c* 2¼ x 8¼ x 4. *d* LCL, truck deliveries. *e* Not used. *f* 2" interior 6# treat. *g* 3" *h* 2" tr; 8# 3# treat. *i* 3 x 3⅝ x 8½. *j* 2½", 6lb. tr.

ASPHALTS: *a* Price at plant, Everett, Mass. *b* F.o.b. refinery Lockport, Ill. *c* F.o.b. Sugar Creek, Mo. *d* F.o.b. refinery, El Segunda. *e* F.o.b. Baton Rouge. *f* F.o.b. Wood River or Roxana, Ill. *g* F.o.b. Richmond, Calif. *h* F.o.b. Martinez. *i* F.o.b. refinery, Baltimore. *j* F.o.b. refinery, Inglewood, Calif. *k* 50–110 penetr. *l* Less than 100 penetr. *m* 40/50 penetr. *n* Tax incl. *o* Drums not avail. Shipped in steel bbl. *q* 40/85 penetr. *r* In customer's drums. *s* Shipped in drums, per drum. *t* 85/200 penetr. *u* Per 100 gal. *v* Per ton. *w* Per gal. *x* Also tank trucks *y* F.o.b. Oakland. ^{A} F.o.b. refinery, Cleveland. ^{B} F.o.b. Destrehan, La. ^{C} Bulk. ^{D} Prices based on transporting to Manhattan via truck. ^{E} RC. ^{F} Also RC. ^{G} Also MS, SS. ^{H} RC 0-5 incl. ^{I} MC 4. ^{J} MC, RC .0675. ^{K} MC 3, 4 & 5. ^{L} MS. ^{M} MC 1-5, RC 1-5, .089. ^{N} MC 3. ^{O} Eff. 2/1/55. ^{P} Fob refinery Savannah: $0.09/gal., tank cars; $0.20/gal., drums.

. . . not just a conversion

DESIGNED and BUILT for CRANE WORK

. . . there is a difference

Yes, there is a difference in whether your crane is designed and built for crane work or is just a change in booms. The difference is spelled out in better performance on all crane work from pile driving to steel setting.

The Bay City MODEL 450 Erectors Crane, shown here, has a rated capacity of 15 tons . . . will handle up to 75 feet of boom, including jib . . . has an independent worm and worm wheel boom hoist that will raise or lower boom, or boom and load, only under power through separate clutches . . . has a collapsible hi-gantry, floating bridle and pendant cable boom tension system, plus tandem drums with the hoist drum capable of wrapping up to 862 feet of ⅝″ cable.

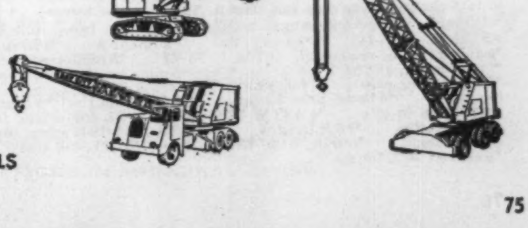
These are but a handful of the bigger values built into the Bay City Erectors Crane. Before buying your next crane, it will pay you to look into the time-saving, money-saving possibilities of a Bay City. Write for complete information or see our nearest dealer.

BAY CITY SHOVELS, INC. • BAY CITY, MICHIGAN

BAY CITY

251

SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS



MATERIALS AND LABOR PRICES

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$4.25	$4.225	$4.30	$9.25	....	$89.00	$107.00	$5.425	$7.30	$5.275	....
Chicago Area	4.25	4.225	4.30	9.25	$5.075	89.00	107.00	5.425	7.30	5.275	....
Pittsburgh Area	4.25	4.225	4.30	9.25	5.075	89.00	107.00	5.425	7.30	5.275	$11.50
Buffalo Area	4.25	4.225	4.30	9.25	5.075	89.00	107.00	5.425	7.30	5.275	11.50
Cleveland	....	....	4.30	9.25	5.075	......	......	....	....	....	11.50
Youngstown Area	....	....	4.30	....	....	......	......	....	7.30	....	....
Geneva	4.25	4.225	....	....	....	......	......	....	....	....	....
Los Angeles	....	....	....	....	5.075	......	......	....	7.30	....	....
Pueblo	4.30	4.70	4.75	....	....	......	95.00	5.425	7.30	5.275	11.50

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	Rail steel	EXPANDED METAL LATHk Per 100 sq. yd., carload lots Std. diamond mesh. 3.4 lb.	Std. ribbed 3.4 lb.
Atlanta	$7.08	$7.22	$7.22	$38.00‡	$42.00‡
Baltimore	7.02	7.06j	....	42.00	45.00
Birmingham	6.65	6.50t	6.50t	51.00p	57.00p
Boston	7.49s	7.37	7.37	42.00	46.00
Chicago	6.69	5.78gu	5.78gu	46.00‡	56.00‡
Cincinnati	7.06ak	7.06rv	....	39.00mo	43.00mo
Cleveland	7.02	5.76c	....	39.00‡	43.00‡
Dallas	9.05	7.25	7.25	49.00	52.00
Denver	8.15	7.20c	....	48.00n	63.00m
Detroit	7.16	6.93w	....	50.50	60.50
Kansas City	7.36a	7.18	....	43.50	47.50
Los Angeles	7.55fd	7.05	....	52.00	58.00
Minneapolis	7.05d	7.68b	7.68b	37.00	41.00
Montreal	7.50–8.00iC/8.50–9.20A	6.65i	6.65i	46.00h	51.00h
New Orleans	....	6.20akz	....	66.00	60.00
New York	7.48	6.85yaa	6.85yaa	42.00no	48.00no
Philadelphia	6.42	6.67	....	38.00‡	42.00‡
Pittsburgh	6.69	6.92z	6.55	37.60	39.60
St. Louis	7.09e	6.30c	6.30c	55.00l	56.00l
San Francisco	7.50	6.85j	....	41.50	47.50
Seattle	5.00e	6.55cj	....	51.00w	57.00w

Quantity extras, per cwt: under 100#, +$6; 100–399#, +$3; 400–999#, +1.25; 1000–1999#, +30¢; 2000–4999#, base price; 5000–9999#, −10¢; 10,000–19,999#, −30¢; 20,000–29,999#, −50¢; 30,000# and up, −70¢

EXTRAS, per cwt—*Quantity: less than 700#, +50¢; 700–1499#, +25¢; 1500–7999#, +10¢ *Size†: #2 +$2.20; #3 +$1.10; #4, +80¢; #5 +62.5¢; #6, #7 +45¢; #8, #9, #10 +30¢ *Bending: heavy, +80¢; light, +$2 (except in New York City and surrounding metropolitan area where bending must be done on the job) *Engineering (details and placing from designs by others): over 500 tons, +45¢; 200–500 tons, +50¢ but not over $4500; 20–200 tons, +60¢ but not over $2000; 5–20 tons, +70¢ but not over $240; under 5 tons, +85¢ but not over $70 *Design only: +60¢

WELDED FABRIC REINFORCING — Per 100 sq. ft., carload lots fob mill

4 × 16 in., No. 8 & 10 wires— Joliet, Ill., Donora, Pa., Monessen, Pa.....$3.18

4 × 12 in., No. 8 & 12 wires— Joliet, Ill., Donora, Pa., Monessen, Pa.....$2.08

6 × 6 in., No. 6 & 6 wires— Joliet, Ill., Donora, Pa., Monessen, Pa.....$3.33

*‡ Delivered *a 2000–9999# *b 10,000–15,999#, fob city *c 20 tons or over *d 10,000–19,999# *e fob plant *f incl. delivering in free zone *g CL *h list price; dominion tax exempt; add provincial and municipal taxes *i add dominion, provincial and municipal sales taxes *j intermediate and hard grade *k fob city *l delivered; contractor to do unloading *m copper alloy *n LCL *o asphalt coated *p del. of 500 sq. yd. or more *q 4# per sq. yd. *r 2% off for cash *s 2,000–4,999# *t add 15¢ del. *u add 6.25¢ switch *v incl 15¢ del. *w 20 tons *x add 5¢ switch *y add 30¢ del. *z add 10¢ del. *aa Prices beginning Aug. 1 based on Morrisville, Pa.; previously based on Sparrow Pt., Md. Decrease in freight costs due to switch in mill base offset mill price rise July '54. *A American made. *C Canadian made. † Number system replaces inch system of classifying bar sizes. New system is based on number of eighth inches in diameter of bar.

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE Per net ton f.o.b. 6 in. to 24 in.a	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Pr Cl. 150	12" Sew Cl. I	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 in. ds.	CLAY DRAIN TILE ASTM C4-24 Per 1,000 ft., carload lots, f.o.b. 6 in.	8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14-41 12 in.	24 in.
Atlanta	$101.00	$1.45	$2.42	$ .545	$1.27	$4.82	$12.925	......	......	$0.90m	$3.40m
Baltimore	121.50	1.45	2.42	.546	1.053	4.275e	11.3775	$178.20	$274.80	.99	2.70
Birmingham	103.00	1.45	2.42	.42	.75	3.30f	10.50f	260.00‡	400.00‡	1.25m	2.75m
Boston	122.00	1.47	2.20	.581qrt	1.205qrt	4.545qrt	12.00qrt	187.80r	289.20r	1.54mg	3.65mg
Chicago	107.00	1.45	2.20	.70m	1.35m	5.62m	13.50m	150.00‡	270.00‡	.80	2.80
Cincinnati	106.00	1.47	2.29	.609t	1.1745t	4.82t	12.61t	225.00	350.00	.80m	2.95m
Cleveland	108.00	1.47	2.29	.49s	.945s	3.96i	10.66i	158.00m	245.65m	.85m	3.25m
Dallas	112.00	1.47	2.54	.439	.799	4.00b	9.17b	......	......	.49	1.60
Denver	115.00	1.53	2.54	.45n	.78n	3.48n	....	......	......	.74m	2.50m
Detroit	106.00	1.47	2.29	.75	1.45	5.75	15.50	230.00m	350.00m	.95	3.82
Kansas City	113.00	1.47	2.29	.53	.945	4.13	11.20	250.00	480.00	.80	3.25g
Los Angeles	130.00x	1.53	2.20	.67l	1.46l	5.97l	14.89l	228.20l	348.90l	.95	2.75f
Minneapolisw	112.00	1.49	2.42	.76mo	1.38mo	5.70mo	....	......	......	1.38h	4.05h
Montreal	110.00	....	....	1.07u	1.73u	5.52u	8.93u	......	......	1.17h	3.11j
New Orleans	101.50	1.45	2.42	.483	.875	4.69	....	280.00r	460.00r	.65	2.29
New York	111.35	1.47	2.20	.68	1.30	5.12	13.50	......	......	1.15	3.00
Philadelphia	110.00	1.45	2.20	.65	1.25	4.95v	12.65v	300.00‡	350.00‡	1.60h	3.95h
Pittsburgh	110.00	1.47	2.20	.468m	.864m	3.86m	9.78m	152.00	244.00	1.05h	2.50h
St. Louis	112.00	1.45	2.29	.56	1.08	4.22	9.80	180.00l	380.00l	1.20il	2.70il
San Francisco	127.00	1.53	2.20	.74d	1.62d	6.59d	16.47d	235.00l	392.00l	1.05n	3.30n
Seattle	138.73	1.54	2.20	.51b	.91b	....	....	150.00c	......	.85k	2.75k

*WROUGHT STEEL PIPE (Full standard weight) Discount from list; see footnote

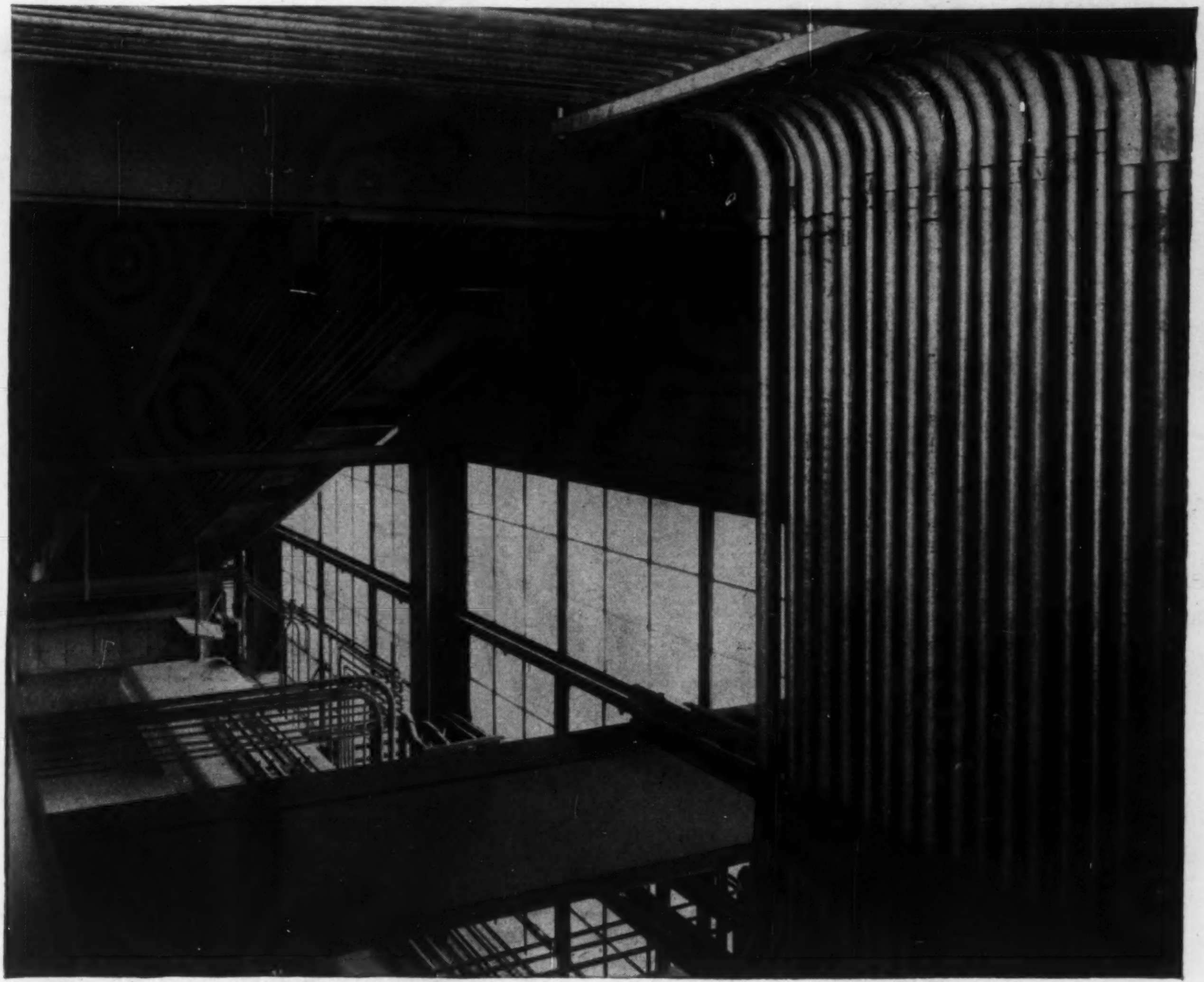
Mill	2½ & 3 in. Butt Weld† Black %	Galv. %	3½ to 6 in. Lap Weld† Black %	Galv. %
Lorain, Ohio	34.25	17.00	....	....
Aliquippa, Pa.	34.25	17.00	22.50a	10.25a
Sparrows Pt., Md.	32.25	15.00	20.50a	2.75
Benwood, W. Va.	34.25	17.00	24.25d	6.50d
Youngstown, O.	34.25	17.00	....	....
Indiana Harbor, Ind.	33.25	16.00	24.50ab	6.75a
Sharon, Pa.	34.25	17.00	....	....
Wheatland, Pa.	34.25	17.00	25.50a	7.75a
Etna, Pa.	34.25b	17.00	24.25d	10.00d
Fontana, Calif.	31.25b	4.00b	12.50ab	+5.25ab

† Threaded and coupled. a 3½ to 4 in. b Continuous weld. c 5 and 6 in. d 6 in.

*‡ Delivered *a Class B & heavier. Based on existing freight rates; subjec to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $7 per ton additional. 30 in. and larger, usually, $1 per ton less. *b Extra strength ASTM C 200–44T *c 4-in., $90 *d SS361-A *e 30-in. *f 21 in. *g culvert pipe; reinforced, ASTM C 76–41 *h reinforced, ASTM C 75–41 *i reinforced, ASTM C 76–37 *j centrispun; no standard specs. in Canada *k 2% off for cash *l fob plant *m truck delivery *n LCL delivered, fob truck *o listed price based on LCL (no min.) *p freight allowed to destination in city *q ASTM C 13–40 *r CL fob origin, freight allowed *s 2 ft lengths *t 3 ft lengths *u CESA A 60–1941 specs. used *v standard strength *w 6 in., $1.67 per ft., Class 150, CL, fob track *x 6 in. *y ss; add 20% for d.s.

*WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft. (based on approx. $200 per net ton): *Butt Weld* ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap Weld* 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: *Butt Weld* — 1 in. black, + 32.75, galv. + 61.0; 1¼ in. black, + 32.75, galv. +60.50, 1½ in. black, + 29.25 galv. + 56.75; *Lap Weld* — 2½ in. to 3 in. black + 33.50 galv. + 59.5; 4½ in. to 6 in. black + 30.50 galv. + 54.75. Add freight rates plus 3% transportation tax to get destination price.



WHY *contractors* LIKE YOUNGSTOWN CONDUIT

● They know it's easy to bend. Easy to thread. Easy to handle and install, especially in cramped or small spaces. And its smooth, inside finish speeds up wire-pulling and results in easier, faster installations.

Wiring in Youngstown rigid steel conduit is safe. It gives protection against damage from moisture, vibration, dust, dirt and crushing. The job is safe. And so is your reputation.

On your next job, don't take chances. Be sure there's no waste. Make sure you get the savings you should, all down the line. Ask your distributor for Youngstown Buckeye Conduit. Approved by the National Electrical Code for all hazardous locations. Buckeye electrical conduit is produced from ore to finished product by one manufacturer—Youngstown.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel

GENERAL OFFICES: YOUNGSTOWN 1, OHIO
DISTRICT OFFICES IN PRINCIPAL CITIES

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F. O. B.

SHORT LEAF YELLOW PINE AND DOUGLAS FIR

All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)

All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1. Lengths up to 20 ft.

(Prices in italics)

	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh	LONG LEAF Y. P. Merchantable grade up to 20 ft. 2x12 Rgh	LONG LEAF Y. P. 12x12 Rgh	PLYWOOD Rail freight increment (See note for base price) 5/8"	PLYWOOD 3/4"
Atlanta........†	$78.00	$80.00	$73.50	$74.00	$77.50	$81.00	$79.00	......	......	......	......	$22.32	$27.24
Baltimore......*	87.00	92.00	85.00	85.00	90.00	90.00	105.00	......	......	$165.00	$180.00	25.92	31.60
	118.00g	*118.00g*	*118.00g*	*120.00g*	*120.00g*	*120.00g*	*130.00g*	*$140.00*	*$140.00*	......	......	......	......
Birmingham....†	83.50	85.50	80.50	87.50	90.50	95 50	105.50	......	......	120.50	165.50	21.78	26 58
	105.00	*105.00*	*108.50*	*108.50*	*108.50*	*105.00*	*105.00*	*105.00*	*105.00*	......	......	......	......
Boston.........*	97/105a	104/114a	96/100a	96/100a	96/100a	96/100a	......	......	......	......	......	25.92	31.60
3	*88.00n*	*88.00n*	*115/117*	*115/117*	*115/117*	*115/117*	*116.00*	*117.00*	*117.00*	......	......	......	......
Chicago........**	99.00	102.00	91.00	106.00	113.00	115.00	111.00	......	......	140.00	140.00	22.45	27.37
	104.00	*104.00*	*112.00*	*112/113*	*112/113*	*114/115*	*121.00*	*121.00*	*121.00*	......	......	......	......
Cincinnati......*	93.75	94.75	83.00	90.50	94.75	103.00	110.50	......	......	131.75	131.75	25.00	30.48
	98.75	*101.00*	*108.00*	*107.00*	*108.00*	*109.00*	*134.00*	*134.00*	*134.00*	......	......	......	......
Cleveland......**	92.00	94.00	92.00	102.00	102.00	103.00	......	......	......	......	......	25.37	30.93
	......	......	*109.00*	*109.00*	*109.00*	*109.00*	*120.00*	*120.00*	*120.00*	......	......	......	......
Dallas.........k†	72.00	78.00	68.50	68.50	73.50	65.50	136.50	......	......	127.50	134.50	18.72	22.80
Denver.........*	*Not in stock*		*119.75*	*121.50*	*121.50*	*122.50*	*125.00*	*137.75*	*140.50*	......	......	13.92	16.98
Detroit.........‡	112.00	116.00	105.00	112.00	118.00	118.00	......	......	......	......	......	25.00	30.48
	125 00	*125.00*	*130.00*	*130.00*	*130.00*	*130.00*	*160.00*	*160.00*	*160.00*	......	......	......	......
Kansas City....*	120.00	120.00	115.00	120.00	125.00	*135.00*	......	......	......	......	......	15.56	20.16
	125.00	*125.00*	*120.00*	*129.00*	*129.00*	*130.00*	*150.00*	*170.00*	*195.00*	......	......	......	......
Los Angeles....1	*98.00*	*98.00*	*98.00*	*98.00*	*98.00*	*98.00*	*129.00*	*139.00*	*129.00*	......	......	16.61ab	20.25al
Minneapolis....♯	*145.00*	*145.00*	*145.00*	*145.00*	*145.00*	*145.00*	*165.00*	*165.00*	*165.00*	......	......	19.89	24.25
Montreal.......ab	88.00	97.00	88.00	88.00	100.00	118.00	......	......	......	99.50	99.50	......	......
	165.00	*165.00*	*165.00*	*165.00*	*165.00*	*165.00*	*120.00*	*122.00*	*122.00*	......	......	......	......
New Orleans...†	100.00	100.00	92.50	85.00	90.00	94.00	118.50	......	......	150.00	148.00	18.72	22.80
†	*110.50*	*110.50*	*114.00*	*120.50*	*120.50*	*120.50*	*119.00*	*126.00*	*126.00*	......	......	......	......
New York......2	112.50	115.50	122.50	125.00	125.00	125.00	165 00	......	......	240/260	240/260	25.92	31.60
	......	......	*125.00*	*125.00*	*125.00*	*125.00*	*160/170*	*165/175*	*165/175*	......	......	......	......
New York......**	92.00	94.00	82.50	93.00	95.60	98.00	90.00	......	......	185.00	235.00	......	......
	100.00	*102.00*	*105.00*	*106.00*	*106.50*	*107.00*	*109.00*	*123.00*	*125.00*	......	......	......	......
Philadelphia....‡		Range from $115.00 to $135.00				115/135	115/135	......	......	210/220	210/220	25.92	31.60
		Range from $128.00 to $165.00				*128/165*	*133/155*	*155.00*	*155.00*	......	......	......	......
Pittsburgh......†		Range from $105.00 to $107.00					120.00	......	......	120.00	130.00	25.92	31.60
	135.00	*135.00*	*135.00*	*135.00*	*135.00*	*135.00*	*125.00*	*145.00*	*145.00*	......	......	......	......
St. Louis.......‡	111/116	113/118	119/124d	121/128d	121/127e	122/128e	......	......	......	......	......	18.72	22.80
	......	......	*123/129i*	*125/129e*	*127/131e*	*127/130e*	*158/173e*	*163/175*	*173/190*	......	......	......	......
San Francisco..A†	*86.00*	*86.00*	*86.00*	*87.00*	*84.00*	*84.00*	*101.00*	*114.00*	*139.00*	......	......	12.22	14 91a
Seattle.........†	*74.00*	*74.00*	*74.00*	*74.00*	*74.00*	*74.00*	*77.50*	*85.00*	*86 00*	......	......	......	......

† F.o.b. mill. * F.o.b. city, CL. out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. ♯ Retail, LCL, deliv. 2. Deliv. truck lots. 3. asd.

LUMBER: **Bold Face type Southern Pine.** *Italics, Douglas Fir.* *a* Spruce *b* Tax exempt. *c* 5M lots. *d* 8, 10, & 12 ft. lengths. *e* 8 to 16 ft. lengths. *g* No. 1 common. *i* 8 ft. lengths. *k* No. 3 common. *n* #3. A Rail freight rate from North west mills to San Francisco are $11.50 to $15.00 per M ft. bm. From Northern Calif. mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock.

For rough, add $3.00 to above figures.

PLYWOOD: Interior Fir Plywood, 4′ by 8′ panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on ⅝", $170.00; on ¾", $191.00. Exterior ⅝", $190.00, ¾", $212.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included. *a* Lower rate by water shipment. *b* 50,000 lb. minimum.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS Discounts from jobbers list, Feb. 1, 1955a Single or Double Thickness A quality	WINDOW GLASS B quality	EXPLOSIVES Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
Atlanta..................	79%	80%	$0.2365
Baltimore................	78%d	80%d	.2365
Birmingham............	82%	83%	.1840
Boston....................	77–10%	77–10%	.2365
Chicago..................	76%	76%	.2365
Cincinnati...............	76%	76%	.2365
Cleveland...............	76–10–10%	76–10–10%	.2765
Dallas....................	75%	75%	.2440
Denver....................	79%	79%	.2415
Detroit...................	76–10–10%	76–10–10%	.2365
Kansas City............	80–10%	80–10%	.2415
Los Angeles............	78%	78%	.2390
Minneapolis............	75–10%	75–10%	.2415
Montreal................	40–5%bc	40–10–5%b	21.35h
New Orleans...........	78%	79%	.2415
New York...............	80–10%	80–10%	.3975g
Philadelphia...........	77%	79%	.2365
Pittsburgh..............	80%	80%	.2090
St. Louis................	80–10%	80–10%	.2415
San Francisco.........	63%e	70%	.2365
Seattle...................	73%	76%	.2390

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U.S.; $1.75 per 100 lbs. higher in Canada.

Glass; *a* Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b* Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. *c* Single thickness. *d* Discount 6/15/52. *e* Discount eff. 12/31/54.

Explosives; * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g* In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. *h* F.o.b. Beloeil (near Montreal), per 100 lb. forcite, 40%. Forcite 60%, $23.10.

40% Ammonia Gelatin price ranges in other than urban areas, per lb. except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.184	$0.2165	$0.2365
W. of Miss. to Rocky Mtn. States, Fla. and Maine..................	.189 –.1965	.2215–.229	.2415–.249
Rocky Mtn. States..................	.189 –.2015	.2215–.229	.2415–.254
Pacific N. W. States..............	.1865–.199	.219 – 2315	.239 –.2515
Pacific S. W. States...............	.184 –.1915	.2165–.219	.2365–.2415

PILES, TIES F. O. B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail Pine*	By Rail Fir
12-in. at butt................	6-in.	30 to 50-ft.	$0.51	....
12-in.— 2-ft. from butt......	6-in.	50 to 59-ft.	.54	....
12-in.— 2-ft. from butt......	6-in.	60 to 69-ft.	.58	....
12-in.— 2-ft. from butt......	6-in.	90 to 100-ft.	....	....
13-in.— 3-ft. from butt......	5-in.	91 to 100-ft.	....	....
14-in.— 2-ft. from butt......	6-in.	50 to 69-ft.	.50/.68	....
14-in.— 2-ft. from butt......	6-in.	70 to 79-ft.	.78/.83	.93
14-in.— 2-ft. from butt......	5-in.	80 to 85-ft.	.83/.98	.94
14-in.— 2-ft. from butt......	5-in.	85 to 89-ft.	....	1.00
14-in.— 2-ft. from butt......	5-in.	90 to 100-ft.	....	1.03

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots:

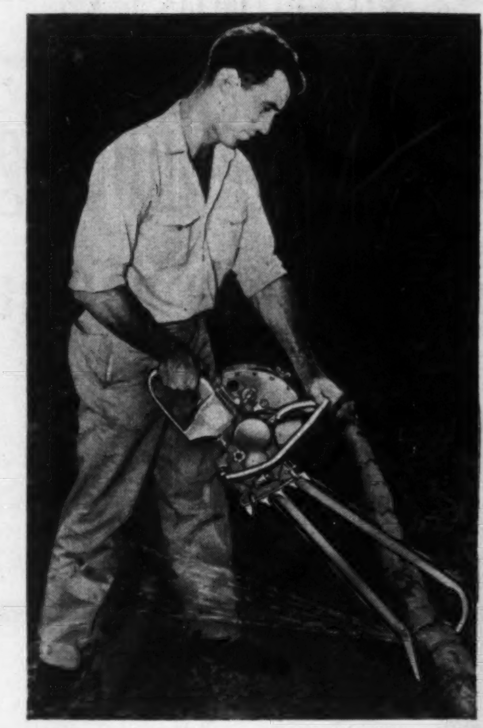
		6"x8"x8′ Untr.	6"x8"x8′ Tr.	7"x9"x8′6" Untr.	7"x9"x8′6" Tr.
Birmingham....	Hardwood, Grade 3.....	$1.95a	$4.00a	Gv. 5 $2.55	$4.90a
	Grade 2.....	1.75	3.80a	" 4 2.40	4.70a
	Grade 1.....	1.45	3.40a	" 3a 2.10	4.50a
Chicago........	Red Oak..............	....	3.20a	....	4.10/4.20a
New York......	S. L. Sap Pine..........	2.00	4.00	3.00	5.00
	Mixed Oak............	2.50	4.50	3.50	5.50
Philadelphia....	Red Oak..............	2.55	3.90	3.45	5.10
St. Louis.......	White Oak............	2.20	....	2.50	....
	Red Oak..............	2.10	2.65a	2.35	3.05a
	Sap Pine or Cypress....	....	2.55a	....	2.90a
San Francisco..	Douglas Fir...........	2.08ef	3.08ef	2.73bf	3.93caf

Tr.—Treated; Untr.—Untreated. *a* Creosoted. *b* 7"x9"x8′. *c* Empty cell. *e* Green *f* f.o.b. cars.

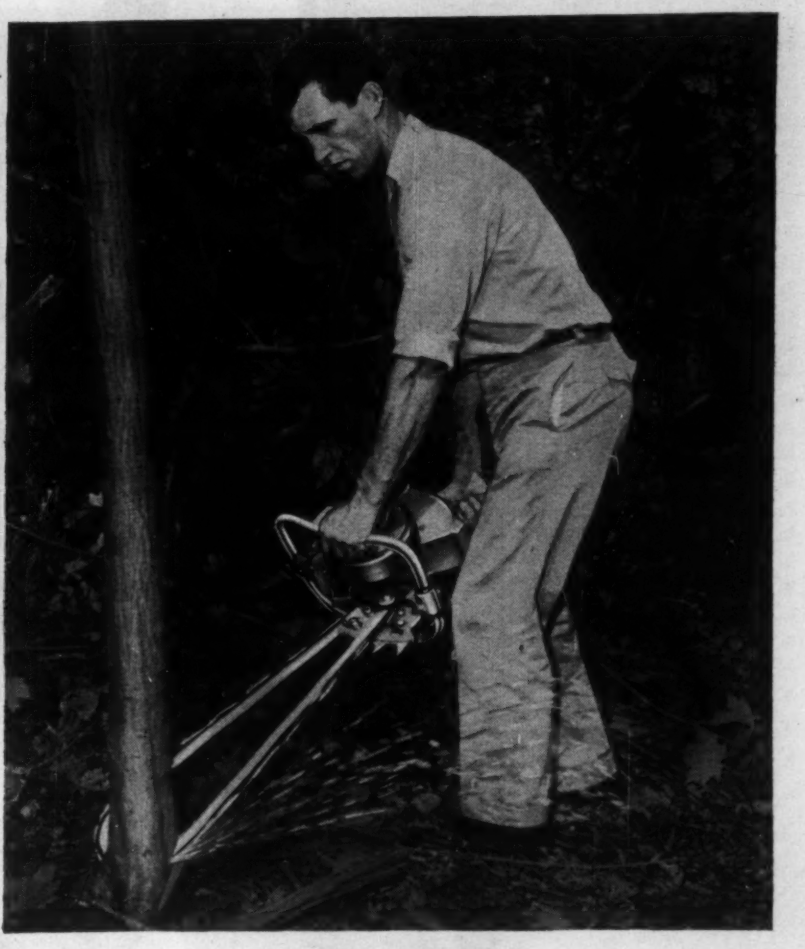
CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

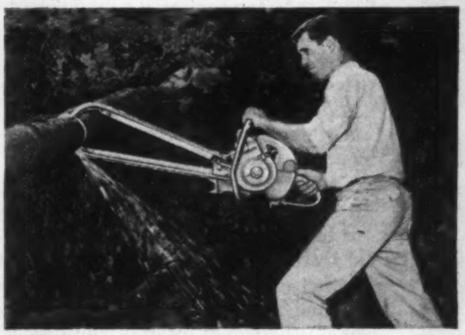
Bleaching powder in drums f.o.b. works, per 100 lb..................	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works.....................	.095
Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b. works, ton....................................	27.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb..........	2.30
Soda ash, 58%, in paper bags, per 100 lb. dense.....................	1.70
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works.....	1.85
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works........	10.35



Bucks logs right on the ground. Fast. Quick. Clean. Jaw-grip spike bites into dirt . . . keeps chain up out of dirt. Spike takes thrust of chain . . . prevents logs from rolling or spinning away.



Plunge-bucking speeds clearing operations. Gets into all kinds of hard-to-reach places. Enables operator to work quickly, but safely, in close quarters and on steep slopes.



NEW
CLEARING ATTACHMENT
FOR HOMELITE CHAIN SAWS

Here is a completely new Homelite development that makes a Homelite One Man Chain Saw an even greater time-and-money-saver. Converts the Model 17 Chain Saw into an *all-purpose clearing tool* . . . quickly, easily.

With this highly maneuverable new attachment . . . driven by the 3.5 h.p. engine of the 22 pound Homelite Model 17 . . . one man can do the work of a whole gang of men using saws and axes. He can fell, buck, and limb all small trees and saplings without bending, stooping or chain binding.

On demonstration after demonstration, men who have used this clearing tool agree that here is positively the best thing yet.

Write for a free demonstration.

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Carryable Pumps • Generators
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REPUBLIC NATIONAL BANK BLDG

Southwest's TALLEST Building

by AMERICAN BRIDGE

Republic National Bank Building, Dallas, Texas

Architects: Harrison & Abramovitz; Gill & Harrell

Structural Engineers: Edwards & Hjorth

Structural Steel Fabrication and Erection: American Bridge

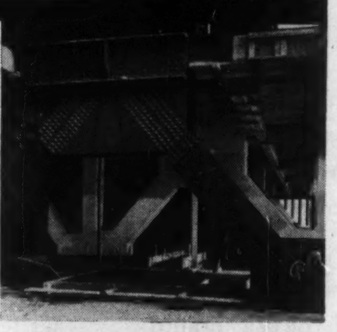
DEEP IN THE HEART OF TEXAS, looming high and handsome above an imposing skyline, the new 36-story home of the Republic National Bank of Dallas is the Southwest's tallest building.

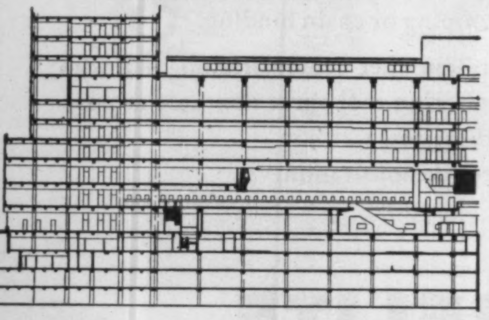
Covering more than an acre of land in the center of the thriving metropolis, this $25,000,000 building stands as another everlasting example of the strength and versatility of steel construction. 14,000 tons of structural steel went into its gigantic riveted frame—all of which was fabricated and erected by AMERICAN BRIDGE.

One of the interesting applications of the steel frame construction is the use of huge trusses in the bank wing's top story from which the floors above the main banking room are suspended, thus freeing the expansive, two-story main banking room of interior columns.

Your architect or consulting engineer can be relied upon to specify the type of construction best suited to your project. And AMERICAN BRIDGE has the experience, the equipment and technically skilled personnel to handle all types of steel construction with economy and dispatch – any time, anywhere. Our nearest office welcomes an opportunity to figure on your next job.

Right: Trusses on top floor of banking wing from which floors below are hung to free main banking room of columns. **Below:** cross section of banking wing showing 4-level underground parking floors and 2-story main banking room above ground floor.





AMERICAN BRIDGE DIVISION, UNITED STATES STEEL CORPORATION
GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA.

Contracting Offices in: AMBRIDGE • ATLANTA • BALTIMORE • BIRMINGHAM • BOSTON • CHICAGO • CINCINNATI • CLEVELAND DALLAS • DENVER • DETROIT • ELMIRA • GARY • MEMPHIS • MINNEAPOLIS • NEW YORK • PHILADELPHIA • PITTSBURGH PORTLAND, ORE. • ROANOKE • ST. LOUIS • SAN FRANCISCO • TRENTON • UNITED STATES STEEL EXPORT COMPANY, NEW YORK

AMERICAN BRIDGE

USS

5-68

UNITED STATES STEEL

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized, or lump
Atlanta	$124.65	$124.65	$249.30	$280.45	......	......	$24.50	$26.50	.....	.....	.....
Baltimore	194.00	207.00	88.00	440.00	572.00	654.00	36.00k	41.00k	32.00	21.50	.....
Birmingham	126.00p	142.00p	253.00p	284.00p	354.00	438.00	25/26ff	30/31gg	29.25	24.00	.....
Boston	196.00†	209.00†	392.00†	283.25†	......	......	36.85p	39.85p	30.00†	28.00†	.....
Chicago	135.00	145.00	280.00	......	......	......	26.00	28.00	31.00	27.00	.....
Cincinnati	205.00j	215.00j	295.00jdd	......	......	......	45.00j	46.00j	27.50j	27.50j	.....
Cleveland	170.00**	181.00**	......	......	......	......	36.50	36.50	28.75	23.75	33.50**
Dallas	......	118.00	......	......	......	......	19.75	32.25	32.00	21.80	.....
Denver	......	......	......	......	......	......	34.00	41.00	34.80bb	28.00bb	34.00bb
Detroit	130.00	138.00	259.00	......	315.00	360.00	37.50cc	38.50cc	34.00	30.00	.....
Kansas City	127.50	147.50	270.00	270.00	340.00	400.00	29.25	29.25	32.00	27.50	28.50
Los Angeles	r	r	r	r	r	r	27.50§	......	34.00	34.00	35.00
Minneapolis	175.00p	196.00p	407.00p	196.00p*	......	......	35.00vp	45.00	40.00bbe	30.00bbe	42.00bbde
Montreal	165.00aq	181.00au	325.00au	230.00	248.00a	......	39.50	46.00	34.80	22.00	18.75u
New Orleans	170.00	170.00	310.00	380.00	......	......	31.00	.....	.....	28.00	28.00
New York	151.90h	162.00h	222.70ch	245.40hn	......	......	41.00	.....	36.00	34.00	.....
Philadelphia	156.30	166.80	312.70	375.20	......	......	30/34	34/40	27.60	25.60	3.17
Pittsburgh	138.00	151.00	260.00	228.00	297.00	341.00	36.00	46.00y	25.00	23.00	2.97m
St. Louis	150.00cc	168.50cc	332.50cc	465.00cc	439.00	621.50	41.50sl	43.00s	.90saa	.75saa	1.25aaspes
San Francisco	156.85a*	177.10a*	235.30dda*	......	......	......	39.50	.....	26.60	26.60	2.65m
Seattle	223.00cc	230.00cc	320.00	240.00ccw	......	......	39.00s	49.00s	42.00shh	37.50	3.90mhh

† F.o.b. yard Roxbury. a Smooth. b Per 50 lb. bags. c 6 x 12 x 12 in.-3 cell. d Pulverised hot. e 5%, 10th following month. g 5⅓ x 8 x 12. h F.o.b. trucks, job site N.Y.C. j Truck load or over. k $1.00 discount l Red face. m Per bbl., 180 lb. n 7¾ x 7¾ x 12. Speed title. p Truck lots. q Provincial and Municipal tax extra. r Not used because of earthquake danger. s 2% discount for cash. t 5⅓ x 8 x 11½. u Tax exempt. v Sand lime. w 5 x 8 x 12. y Stacked. z Pebble lime price per 80 lb. sack. aa Price per sack. Lime not sold per ton. bb LCL. cc Truck delivery. dd 6 x 12 x 12. ee Pebble lime. ff 80% common. gg Select. hh LCL. § F.o.b. yard. ** Warehouse delivery. * F.o.b. Stockton.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 800-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases in oil w	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 85-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 300 lb. bbl. per ton
Atlanta	$17.75	$28.275	$3.26	$3.51	$3.01	$2.95	$2.45	$2.45	$0.60	$55.00
Baltimore	17.50	27.90	2.75	4.25	3.35	2.42	3.73	3.73	.44	48.32
Birmingham	17.75	28.275	3.90	3.40	....	2.42	2.04	2.04	.79ff	36.00ee
Boston	17.50	27.90	....	....	....	2.97qg	2.82og	2.82og	.42g	50.50g
Chicago	17.50	27.90	....	....	....	2.64‡u	2.61‡o	2.61‡o	40.00‡bbr	50.00‡
Cincinnati	17.50	27.90	....	....	....	2.49	2.31	2.31	.46v	49.36
Cleveland	17.50	27.90	2.23pgg	2.48gg	2.52gg	2.42q	2.24o	2.24o	.38y	42.70hh
Dallas	17.75	28.65	....	4.05	....	3.50q	3.75o	4.35o	.36	58.50hh
Denver	18.00	28.40	3.29	5.15	3.04	2.42	2.05o	2.23o	.43ff	45.00
Detroit	17.50	27.90	2.35	3.25	2.50	2.42	2.24f	2.24	.50	46.00
Kansas City	17.50	28.65	3.50	3.00ys	2.65	2.42	2.24o	2.24o	.38	59.00
Los Angeles	17.50	28.15	3.30n	4.50n	4.20n	3.10n	2.00en	l	.64n	l
Minneapolis	17.50	29.88/28.02	....	....	....	2.42dd	2.24hidd	2.24hidd	.41idd	44.00v
Montreal	.....	21.95	2.95Dff	4.05Eff	3.25Fff	4.00t	3.65tf	3.65t	1.06st	3.30ht
New York	17.50	27.90	....	....	....	2.42G	2.24Go	2.24Go	.41Gz	44.00G
Philadelphia	17.50	27.90	3.60	3.40/3.65	3.50/4.60	2.54	2.94	2.94	.37	26.00
Pittsburgh	17.50	27.90	2.68	2.85	3.15	2.75	2.60o	2.60s	.38	49.00
St. Louis	17.50	27.90	....	....	....	2.49	2.31h	2.31h	.38y	51.26
San Francisco	17.50	28.15	2.40	....	3.40	2.58	4.00aa	....	.41	.....
Seattle	17.50	28.40	3.07mcc	2.93mcc	....	3.45mocc	2.91hmcc	....	.59mcc	52.00mcc

‡ Delivered. Note: Red lead in oil 50c higher than white lead in oil. a Red lead prices change frequently due to pig lead price changes. b U. S. War Dept. Spec. 3-49A. c ASTM Spec. D266-31. d 80% minimum ferric oxide. e 15 lb. f Per 432 sq. ft. g F.o.b. yard, Roxbury. h Per roll. 65 lb. i Net carload lot prices; Minneapolis and vicinity. k Per cwt. l Not used. m 1% discount for cash. n F.o.b. city. o Per 60-lb. roll p 6-drum, 50 gal. ea. q Per 90-lb. roll. r F.o.b. factory, Chicago. s 466 Med. t Federal tax included. u Per 90 lb. square. v Per ton. w Price to large paint contractors is $1.25 less x Mineral surfaced. y 55-gallon container. z Drums. aa Approximate cost per 100 lbs. bb Roofers coating and cement; Price per ton. cc LCL, truck delivery. dd 2% cash discount. ee Asphalt pitch in 100 lb. package. ff 5-gal. drums. gg F.o.b. factory. hh Incl. freight. D. Std Black. E. Ready-mixed. F. Over 80% ferric oxide. * Aver. wt. approx. 425 to 550 lbs. drums G Freight allowed to destination not exceeding .50 cwt.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Heavy Const.
Atlanta	$3.10	$2.50	$2.85	$2.60	$2.75	$2.90	$2.90	$1.33	$1.33
Baltimore	3.20d	2.75	3.325i	3.10/3.25	3.075i	2.975	2.975t	1.675i	1.675i
Birmingham	3.25	2.50	2.925h	2.32	2.72	3.00	3.125h	1.375	1.475
Boston	3.185e	2.75	3.325j	3.20	3.30I	3.13H	3.20d	2.22Y	2.22Y
Chicago	3.55h	3.30e	3.40h	3.15w	3.625p	3.53f	3.39e	2.50h	2.50h
Cincinnati	3.325	3.075	3.19h	2.85/3.10	3.10	3.28N	3.335Z	2.12	2.02
Cleveland	3.375i	3.325‡	3.325i	3.175	3.325	3.325	3.325e	2.575	2.575
Dallas	3.50	2.75	2.875	2.75	3.437	3.00	3.00	1.45	1.45
Denver	3.50	2.85	2.85	2.78	3.375i	3.00	3.05	1.875	1.875
Detroit	3.45ve	3.21vw	3.35v	3.20v	3.49dl	3.52H	3.125h	2.45v	2.45v
Kansas City	3.625	2.75	2.90	2.725/2.97	3.25	3.18o	3.25h	2.08	2.055
Los Angeles	3.40	2.875d	3.175h	2.72d	3.56s	3.20	3.35e	2.15i	2.15i
Minneapolis	3.225	2.80	2.97	2.75	3.00	3.15n	3.00	2.05	2.05
New Orleans	3.10	2.52	2.90m	2.70	2.725	3.00h	3.00e	1.425	1.425
New York	4.15br	3.57bJ	3.975p	3.84J	4.15A	3.63asF	3.815bL	2.415J	2.415J
Philadelphia	3.92i	3.20	3.63iM	3.07/3.82e	3.625S	3.80ne	3.615e	1.95	2.25
Pittsburgh	3.625h	3.20h	3.225h	3.35h	3.375h	3.50	3.375h	2.10h	1.98d
St. Louis	3.62c	3.125h	3.10h	3.125h	3.25h	3.50c	3.39B	2.175h	2.175h
San Francisco	3.65be	3.005e	3.175h	2.835e	3.50ah	3.30 U	3.35K	2.175e	2.175e
Seattle	3.40d	2.76d	2.95d	2.88d	3.25d	3.135 X	3.26Y	2.35d	2.35d
Montreal*†	2.00	1.80	1.90	1.70	2.00	1.90	2.05	1.25	1.40

* Cost of living bonus now included in basic wage. ‡ Includes 5¢/hr tool replacement. † Plus 2% vacation pay.

a 6 hr. day. b 7 hr. day. c Incl. 3% vac. stamp fund plus 7½¢ WF for bricklayers; 4% VF for electricians plus 8¢ WF, 1% PF d Incl. 10¢ H&WF. e Incl. 10¢ VF. f Incl. 6% WF. g Incl. 11½¢ WF h $2.725 homes & housing plus 7½¢ WF. i Incl. 17¢ WF j Incl. 10½¢/hr. WF. k Incl. 7½¢/hr. WF. l Incl. 4% VF. m Incl. 5¢/hr WF. n Incl. 25¢ H, W, Ins., Vac. & Retirement. o Incl. 10¢ PF, 7¢ WF. p Incl. 3% WF, 3% PF. r Incl. 4% WF and 20¢ PF. s Incl. 5% W&PF, 4% VF, 1% NC, 6 PH. t Incl. 7½¢ H&WF. u Incl. 1½% PF. v Incl. 10¢ WF. w Negotiating. x Incl. 8¢ WF. y Incl. 22½¢ WF. z Incl. 7½¢ IF, 5¢ H&WF. A Incl. 15¢ WF, 15¢ PF & 20¢ B.F. B Incl. 3% WF, C Incl. 2½¢ H&WF. E Plus 6% WF, plus travel pay per day. F Plus $4/per day Annuity contrib. H Incl. 7¢ WF, 6% VF. I Incl. 15¢ H&WF. J Incl. 5% WF. 6PH. K Incl. 10¢ WF, 12½¢ VF, 7½¢ PF. L Incl. 3% WF, 3% PF, 2% VF, 1% EF. M Incl. 7½¢ PF. N Incl. 1% WF. O Incl. 10¢ WF, 1% PF. R Incl. 12¢ WF and 1¢ apprentice. S Incl. 12½¢ H and WF. T Incl. 21¢ H, W & VF. U Incl. 7½¢ WF, 4% VF, 1% PF. W Incl. 2% VF. X Incl. 6¢ VF. & 7½ H & WF Y Incl. 7¢ H & WF. Z Incl. 8½¢ WF.

MEXICO CITY PRICES

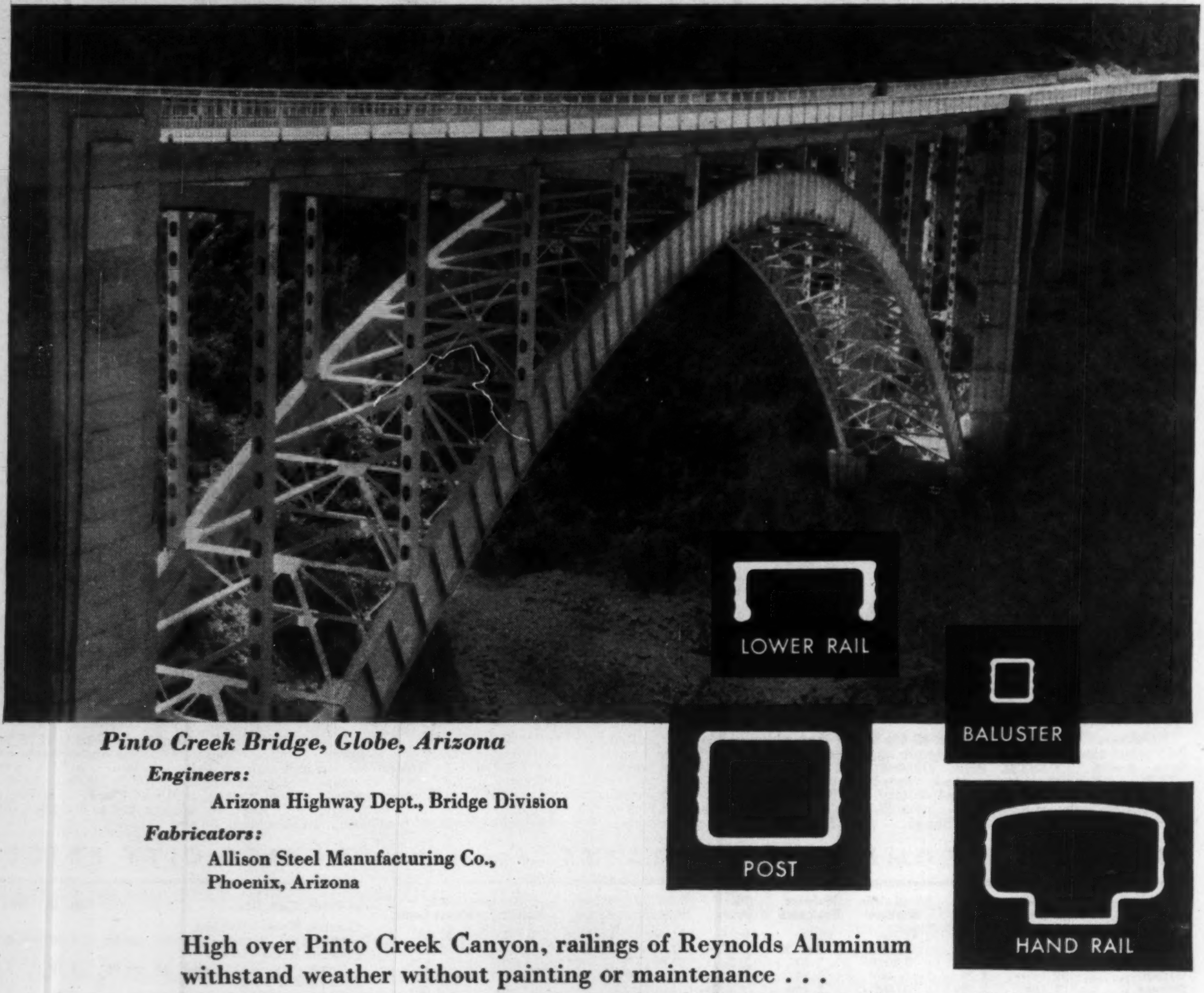
In Pesos, F.o.b. City		Feb. '55	Mar '55
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.19	1.19
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	1.19	1.19
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	2.25	2.25
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2.25	2.25
Struct. Iron Workers (8 hr. day) ..... Remachadores.	av. per hr.	1.37*	1.37*
Struct. Steel Shapes 3"-15" x 12 meters	per metric ton	1490.00	1490.00
Reinf. Steel, Corr. Rods			
⅜" x 11 meters	per ton	1490.00	1490.00
½" x 11 meters	per ton	1490.00	1490.00
⅝" x 11 meters	per ton	1490.00	1490.00
¾" x 11 meters	per ton	1490.00	1490.00
⅞" x 11 meters	per ton	1490.00	1490.00
1" x 11 meters	per ton	1490.00	1490.00
Gravel truck load of 3½ cu. meters			
Blue Gravel	per tr. load	69.00	69.00
Rose Gravel	per tr. load	62.00	62.00
Cement, Std. Port. (Tolteca)	per ton	160.00	160.00
Lumber			
3rd Class Pine	per M ft.	850.00	900.00
1st Class Pine	per M ft.	1500.00	1600.00
2nd Class Pine	per M ft.	1300.00	1300.00

* 1st & 2nd floors. Aver rate $4.38

ENR Skilled Average: (Bricklayers, Carpenters, Iron workers): $3.190 **ENR Common Average:** $2.025

High Proof of Performance . . .

ALUMINUM BRIDGE RAILINGS



Pinto Creek Bridge, Globe, Arizona

Engineers:
Arizona Highway Dept., Bridge Division

Fabricators:
Allison Steel Manufacturing Co.,
Phoenix, Arizona

High over Pinto Creek Canyon, railings of Reynolds Aluminum withstand weather without painting or maintenance . . . fit modern bridge design . . . and provide ample strength at low installed cost. This railing is the "vertical" type, assembled entirely from extruded sections (profiles shown). These extrusions are standard, produced on order from standard dies. Other types of bridge railings utilize Reynolds Aluminum Pipe, which is a standard mill product available through regular distributors. For sources of standard products and for advice on special aluminum requirements, call the nearest Reynolds office listed under "Aluminum" in classified directories. Or write to **Reynolds Metals Company,** General Sales Office, Louisville 1, Kentucky.

For quick reference see Catalog $\frac{5a}{Re}$ in Sweet's Architectural file.

REYNOLDS ALUMINUM

SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network.

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft ½"	GYPSUM PLASTER BOARD tapered edge per Msq ft ⅜"	GYPSUM BOARD LATH plain or perf per Msq ft ⅜" x 16" x 48"	GYPSUM SHEATHING tongue & groove per Msq ft ½" x 2' x 8'	FIBER BOARD SHEATHING asph impreg & coat per Msq ft ½" sq ed	FIBER BOARD SHEATHING asph impreg & coat per Msq ft 25/32" T&G	FIBER BOARD INSULATION sq edge, paint per Msq ft ½"	MINERAL WOOL INSULATION† loose, per 40-lb bag [a]	MINERAL WOOL INSULATION† 3" batts per M sf	GLASS FIBER INSULATION† loose, per 40-lb bag [a]	GLASS FIBER INSULATION† 3" batts per M sf	ALUMINUM FOIL per roll of 250 sf Single	ALUMINUM FOIL per roll of 250 sf Double
Atlanta	......	$65.00	$45.00	$75.00	$75.00	......	$75.00	$1.08	$75.00	$1.45[b]	$56.00	......	......
Baltimore	$47.00[f]	41.50[f]	31.00[f]	52.50[f]	63.00[f]	106.00[f]	67.00[f]	1.30	66.00	1.60	45.00	$4.25	$6.35
Birmingham	67.00	56.00	46.75	75.00	68.50	116.00	67.50	1.32	72.00	1.75	77.00	3.46[g]	5.20[w]
Boston	46.50[m]	41.00[m]	31.50[m]	48.00[m]	64.00[m]	109.00[m]	79.00[hn]	1.45	75.00	1.40	41.00	5.30	7.90
Chicago	67.00	50.00	41.00	57.00	80.00	117.00	75.00	1.60	84.00	.....	62.00[bb]	5.25	7.50
Cincinnati	44.01[w]	38.08[w]	30.08[w]	45.81[w]	65.00[w]	110.00[w]	65.00[w]	.....	61.00	1.25	75.00	5.95	8.95
Cleveland	45.50	36.50	40.00	65.00	75.00	110.75	75.00	1.35/1.50	75.00	2.20	60.00	......	......
Dallas	55.00	52.50	40.00	62.50	73.50	122.50	70.00	1.90	65.00	1.35	65.83	4.25	6.35
Denver	60.00	52.50	40.00	60.00	72.90	123.00	71.90	.....	71.00[i]	1.30	50.00	11.00[r]	21.00[r]
Detroit	55.00	48.50	33.75	54.00	56.00[ce]	93.00[ce]	54.00[ce]	.....	.....	1.95[b]	.....	......	......
Kansas City	65.00	55.00	40.00	65.00	72.00	120.00	75.00	1.40	80.00	1.40	80.00	5.76	8.46
Los Angeles	50.00	45.00	0.31[x]	53.00	71.87	121.25	70.00	.....	80.00	1.35[at]	48.00[t]	17.00[o]	25.40[o]
Minneapolis	74.00	85.00	0.40[x]	65.00	70.00	114.00	70.00	1.30	78.00	1.30	78.00	6.50	9.00
Montreal	58.00	......	39.00	64.00	......	......	......	.....	.....	.....	.....	......	......
New Orleans	65.00	50.00	45.00	65/70	65.00	100/115	70.00	1.95	79.00	.....	.....	15.66[u]	27.66[v]
New York	50.00	44.50	34.00	51.00	66.00	108.00	66.00	1.55	69.00	1.90	72.00[l]	5.20	......
Philadelphia	50.00	48.00	34.00	48.50	67.50	105.00	49.20	.....	70/75	65/75	70/75	5.50/6	7/7.50
Pittsburgh	65.00	55.00	40.00	68.00	60.00	102.50	57.50	1.80	70.00	1.80	70.00	4.00	6.00
St. Louis	60.00	55.00	40.00	60.00	75.00	110.00	75.00	1.75	70.00	1.30	52.00	3.00	4.50
San Francisco	49.00[t]	41.50[x]	0.33[x]	53.00[k]	......	94.00	60.25	1.60	72.00	1.55	72.00	4.70	7.56
Seattle	57.00	50.50	40.00	59.00	71.40	120.35	70.20	1.50[y]	81.00	1.65[s]	62.00[aa]	4.25[g]	6.75[g]

[a] for hand packing [b] per 30# bag [c] carloads [e] 56,000 sq ft up quantity [f] full trailer loads [g] 80# kraft paper backing [h] LCL [i] flameproof $75.00
[k] plain core; asph core $56/M sq ft [l] 2-in: $52/M sq ft [m] 10 ton quantities [n] distributor's siding [o] per Msf rol [p] per sf [r] per cwt [s] per 27# bag
[t] fob plant, Santa Clara [u] honeycomb, 1¼-in [v] honeycomb 2½-in [w] fob city [x] per sq. yd. [y] 26# bag [z] 32# bag [aa] fob warehouse [bb] 2"

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER† Neat per ton	PLASTER† Gauging per ton	VERMICULITE† Home Insulation pellets per bag of 4 cu ft	VERMICULITE† Plaster aggregate per bag of 4 cu ft	VERMICULITE† Concrete aggregate[l] Treated per bag of 4 cu ft	VERMICULITE† Concrete aggregate[l] Untreated per bag of 4 cu ft	ALUMINUM SHEET[h] Flat[j] .102" th 36"x96" & 48"x144" per lb[t]	ALUMINUM SHEET[h] Corr roof .032" th 35"x12' per sh[u]	STAINLESS STL SHEET*-TYPE 302[g] 20 ga 48"x96–120" per cwt[hh]	STAINLESS STL SHEET*-TYPE 302[g] 28 ga 36"x120" per cwt[mm]	COPPER WATER TUBING-TYPE L 2000 ft lots per ft[a] ⅜"[b]	COPPER WATER TUBING-TYPE L 2000 ft lots per ft[a] ½"[c]
Atlanta	$29.00	$36.00	$1.45	$1.35	$1.50	....	$0.359[n]	$7.067[n]	$53.68	$61.18	$14.49[f]	$20.29[f]
Baltimore	21.60	32.00	0.95	1.15	....	$1.15	0.370	0.377[r]	52.75	60.25	0.1518	0.2129
Birmingham	36.00	43.00	1.55	1.55	1.75	....	0.389	8.04	54.18	61.68	0.1518	0.2129
Boston	21.00	......	1.15	1.18	....	1.30	0.424[q]	23.60[op]	52.00[dd]	57.50[dd ff]	0.1518	0.2129
Chicago	24.60	24.60	1.45	1.50	1.50/1.60	....	0.416[o]	8.40#[p]	56.25#[ee]	63.75#[ee]	0.1518	0.2129
Cincinnati	25.00*	22.00*	1.75	1.75	1.85	1.75	0.408	9.72	56.35	68.35[ff]	0.1518	0.2129
Cleveland	26.00	40.00	1.25	1.32	1.40	....	0.369[aa]	7.569	52.00	59.05	17.26[f]	24.20[f]
Dallas	29.80	31.80	1.20	1.25	1.30	....	0.379	0.439[r]	55.50	63.00	0.1449	0.2029
Denver	24.00	24.00	1.40	1.35	....	1.50	0.389	8.339	54.07[gg]	61.57[gg]	0.1449	0.2029
Detroit	24.00	24.00	1.27	1.33	1.42	1.42	0.398	8.507	56.25	63.50	12.00[f]	24.21[f]
Kansas City	30.00	35.00	1.20	1.30	1.40	....	0.389	7.77	56.77[ee]	64.27[ee]	15.18[f]	21.29[f]
Los Angeles	25.00	26.00	1.25[ii]	1.20[ii]	1.45[ii]	1.25[ii]	0.421	8.71	60.85	68.35	0.1518	0.2129
Minneapolis	31.00	31.00	1.30	1.60	....	1.80	0.425	7.68	57.01	69.01[ff]	0.1440[d]	0.2020[d]
Montreal	......	......	.....	.....	....	....	......	......	......	......	......	......
New Orleans	35.00	37.00	1.50	1.20	1.25	1.25	0.359	0.366[aa bb]	56.68	64.18	0.1449	0.2029
New York	23.00	29.00	1.25	1.20	1.40	1.30	0.389#[ee]	7.74#	54.82	62.32	15.90[f]	23.30[f]
Philadelphia	23/25	32.00	1.35	1.35	1.35	1.40	26.50#[wx]	7.55#	53.23#	60.98#	14.49[f]	20.29[f]
Pittsburgh	25.00	29.00	1.25	1.25	1.30	1.25	0.397	8.13	53.70	59.20	0.1518	0.2129
St. Louis	30.00	37.00	1.25	1.50[ii]	1.60[ii]	1.50	0.402[to]	8.567[v]	53.14[kk]	71.14[kk]	15.18[fm]	21.29[fm]
San Francisco	24.00	26.00	1.05	1.03	....	1.24	0.416[rr]	8.14[cc]	61.00	68.00	0.1449	0.2029
Seattle	33.00	36.50	1.45	1.25[k]	1.65	....	0.359	7.067	60.50[ee]	68.00[ee]	0.1449	0.2029

† trucklots, delivered * fob whse # delivered [a] fob city [b] ½" O.D. [c] ⅝" O.D. [d] 10M ft & over [e] 2–10M ft; 10M ft & up: $0.1925/ft [f] per 100 ft [g] 5 tons & up; cold roll, anneal & pickled; 2B finish [h] 15M lb [i] 3003 alloy; 1100 alloy: $0.456/lb [j] 1100 & 3003 alloy, mill finish [k] per bag of 3 cu ft [l] treated has air entraining agent; untreated does not [m] 2–10M ft [n] fob plant, fr allow [o] 5M lb & up [p] 100 sq ft quantity [q] 2M lb quantity [r] per lb [t] 36"x96": 10.81 lb/sh; 48"x144":21.7 lb/sh [u] 19.31 lb/sh [v] in 4M-lb skids; $0.296/lb in 1M-lb cases [w] 48"x144" [x] 36"x96" $13.25/sh [aa] 16M lb & up [bb] fob mill [cc] 26"x6-12'
[dd] add $0.75/cwt for boxing [ee] 4 tons & up [ff] 26 ga [gg] add $2/cwt boxing; $0.75/cwt on skids [hh] Theoretical wt for 48"x96"; 50.4-lb, per sh. [ii] 300-bag lots
[ii] per 100-lb bag [kk] mill shipment; add $2 per cwt for immediate del [mm] Theoretical wt: 19.7-lb per sh [nn] Deliv. warehouse means

EQUIPMENT OPERATOR WAGE RATES

	Truck drivers 1½ T	Truck drivers −4 cy Dump	Truck drivers +4 cy	Tractor Operators incl bulldozers 34–49 hp	Tractor Operators incl bulldozers 70–100 hp	Tractor Operators incl bulldozers 100 & over	Tractor scraper 15–16 cy	Power cranes & shovels ½ cy	Power cranes & shovels ¾ cy	Motor grader oper	Air comp oper	Air tool oper
Atlanta	1.40	1.40	1.60	2.335	2.335	2.335	2.325	2.85	2.85	2.325	2.10	1.55
Baltimore	1.65[a]	1.80[a]	1.90[a]	2.45/2.60[b]	2.45/2.60[b]	2.45/2.60[b]	2.45/2.60[b]	3.10/3.25[b]	3.10/3.25[b]	2.45/2.60[b]	2.45/2.60[b]	2.25
Birmingham	1.59	1.85[ff]	1.92[gg]	2.46	2.46	2.46	2.60	2.60	2.60	2.46	2.185	1.525
Boston	1.945[c]	.....	.....	2.825[d]	2.825[d]	2.825[d]	2.825[d]	3.20	3.20	3.20	2.555	2.18[e]
Chicago	2.12[fjj]	.....	.....	2.85[g]	3.00[h]	3.05[i]	2.85	3.30	3.30	2.95	2.95	....
Cincinnati	2.10[j]	2.20[fii]	2.30[ii]	2.85	2.85	2.85	2.85	3.10	3.10	3.10	3.10	3.10
Cleveland	2.42	2.42	2.42	3.05	3.05	3.05	3.05	3.30	3.30	3.05	2.925[k]	2.925
Dallas	1.45	1.45	1.45	1.45/2.625[l]	1.50/2.625[l]	1.50/2.625[l]	1.50/2.625[l]	1.50/2.625[l]	1.60/2.625[l]	1.50/2.625[l]	1.45/2.00[l]	1.45/1.55[l]
Denver	2.00	2.00	2.10	2.00	2.61	2.61	2.61	2.78	2.78	2.61	2.61	2.225
Detroit	2.31[a]	2.31[a]	2.31[a]	3.20[m]	3.20[m]	3.20[m]	3.20[m]	3.20[m]	3.20[m]	3.20[m]	2.925[m]	....
Kansas City	1.99[n]	1.99[o]	2.065[p]	2.175	2.725[q]	2.725[q]	2.725[r]	2.97	2.97	2.585[s]	2.725[t]	2.115
Los Angeles	2.255[u]	2.255[u]	2.285[u]	2.80[m]	2.80[m]	2.80[m]	3.21[m]	3.03[m]	3.03[m]	2.94[m]	2.50[m]	2.41[m]
Minneapolis	2.05	2.05[v]	2.20[w]	2.53	2.75[q]	2.97[x]	2.75	2.97[y]	3.23[z]	2.53	2.42	2.15
New Orleans	1.525	1.525	1.525	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.10	1.525[hh]
New York	2.12¼[aa]	2.52[bb]	2.52[bb]	3.176[cc]	3.176[cc]	3.176[cc]	3.31[cc]	4.095[cc]	4.095[cc]	3.31[cc]	3.31[aa]	2.78[aa]*
Philadelphia	1.825/2.025[u]	1.825/2.025[u]	1.825/2.025[u]	3.07/3.82[m]	3.07/3.82[m]	3.07/3.82[m]	3.07/3.82[m]	3.07/3.82[m]	3.07/3.82[m]	3.07/3.82[m]	2.89[m]	2.05[m]
Pittsburgh	2.125	2.125	2.125	2.875	3.125	3.175	3.175	3.275	3.275	3.175	3.175	2.125
St. Louis	2.10	2.10	2.10	3.125[u]	3.125[u]	3.125[u]	3.125[u]	3.125[u]	3.125[u]	3.125[u]	2.525[u]	2.10
San Francisco	2.10	2.10	2.33[w]	2.845	2.845	2.845	2.845	3.175	3.175	3.005	2.455	2.175
Seattle	2.405[a]	2.405[dd]	2.605[ee]	2.53	2.73	2.73	2.73	3.08	3.08	2.83	2.53[hh]	2.40
Montreal	1.25	1.25	1.25	1.63	1.63	1.63	1.63	1.89	1.89	1.63	1.70	1.50

[a] incl 5¢/hr HWF [b] lower rates, straight time, other broken [c] 2-axle; 10-wheel $2.00; Euclid $2.20 [d] Intermediate [e] bldg constr; highway $2.075 [f] less than 2-T
[g] blade [h] scoop, bldg [i] scoop, road [j] plus $2 pd by employer for hosp. death benefits to family [k] bldg constr; steel constr $3.30 [l] higher rates are union, other taken from min wage scale approved by County Commissioners Court [m] incl 10¢ H&WF [n] flatbed [o] under 10 cy [p] over 10 cy [q] over 50 hp [r] blade grader [s] form and subgrade [t] single [u] incl 7½¢ HWF [v] up to 6 cy [w] 6–8 cy [x] cat oper [y] up to 3½ cy [z] 3½ cy & over [aa] applies to local 807 [bb] incl 3% WF 2% PF, 11 PH [cc] incl 5% WF [dd] up to 5 cy [ee] 5 cy & over [ff] 3 T but not incl 5 [gg] 5 tons & over [hh] excavating [ii] crane $2.10, heavy $2.30 [jj] Includes 12¢ H, W & PF
[hh] $1.60 was foreman rate

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

† **Connecticut**—AAA FACILITIES—BA 4/12—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., Special A.A.A. Facilities, (Fairfield) Bridgeport Area, ENG-19-016-55-92, $900,000-$1,000,000. Extended date. Leon Chatelain Jr., 1632 K St. N.W., Wash., D. C., and Spector & Montgomery, Falls Church, Va., archts. Fay, Spofford & Thorndike, 11 Beacon St., Boston, Mass., engrs. CD 3/23.

▲† **Mass., Bedford**—PARKING APRONS—BA 4/12—U. S. Eng., 857 Commonwealth Ave., Boston, aircraft parking aprons, taxiway warm-up pad, calibration hardstand, Hanscom Air Force Base, ENG-19-016-55-76, $2,000,000-$2,500,000. Plans deposit $10, refundable, Lockwood-Greene Engineers, Inc., 40 Central St., Boston, engr.

† **Me., Bangor**—OPERATIONS BLDG., etc.—BA 4/13—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., base operations bldg. and control tower, Dow Air Force Base, ENG-19-016-55-98, $200,000-$250,000. Plans deposit $10, refundable. Keyes, Smith & Satterlee, 3 Dupont Circle, Wash., D. C., engrs.-archts. CD 10/8.

▲† **Me., Bangor**—AIRCRAFT PAVEMENTS—BA 4/14—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., aircraft pavements, A F lighting, utilities, excess cut and fill Dow Air Force Base, ENG-19-016-55-72, $4,000,000-$4,500,000. Plans deposit $25 refundable, Seelye, Stevenson, Value & Knecht, 101 Park Ave., New York, N. Y., engrs. CD 12/17.

† **N. H., Portsmouth**—WING HEADQUARTERS—BA 4/15—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., wing headquarters, air police station, airmen's club addn., Portsmouth Air Force Base, ENG-19-016-55-99. $400,000. Plans deposit $10. Alonzo J. Harriman, Inc., 292 Court St., Auburn, Me., engr-archt. CD 7/20/53, under LB.

BIDS ASKED—BUILDINGS

Conn., Newington—SCHOOL—BA 4/19—Town, Bd. Educ. and Town Bldg. Comn., Newington, Junior-Senior High School addn. $600,000. Ernest Sibley & Ernest Sibley Jr., 7 S. Main St., West Hartford, archts. CD 3/7.

▲ **Mass., Lincoln-Sudbury**—SCHOOL—BA 4/28—Lincoln-Sudbury Regional School Dist. Comn., Malcolm L. Donaldson, chn., Lincoln, Town House, Lincoln, regional school Lincoln Rd. $1,000,000. Plans deposit $25, refundable. Anderson, Beckwith & Halble, 11 Beacon St., Boston, archts. CD 7/14.

SOON LETS CONTRACT—BUILDINGS

▲ **Mass., Cambridge**—LIVING CENTER—Radcliffe College, 10 Garden St., soon lets contract Graduate Living Center. $2,000,000. Perry, Shaw & Hepburn, Kehoe & Dean, 31 St. James Ave., Boston, archts. CD 11/25/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Gahagan Constr. Corp.**, 90 Broad St., New York, N. Y. LB **$991,700**, est. $1,000,000. dredging Portland Harbor, ENG-19-016-55-26, MAINE. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Mar. 23. CD 2/23.

† **The Bridge Constr. Corp.**, 341 Water St., Augusta, Me., LB **$118,756**, est. $200,000-$300,000. utilities for nose hangars, Loring Air Force Base, ENG-19-016-55-91, LIMESTONE, ME., U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Mar. 22. CD 3/7.

† **Davison Constr. Co. Inc.**, 1306A Elm St., Manchester, N. H., CA **$549,700**, est. $600,000, headquarters squadron supply, structural fire station, main post exchange, branch post exchange, Portsmouth Air Force Base, ENG-19-016-55-83 PORTSMOUTH, N. H. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Mar. 10. CD 3/15, under LB.

† **Granger Constr. Co. Inc.**, 106 Main St., Worcester, Mass., LB **$759,860**, est. $600,000-$1,000,000. AIO warehouse, special weapons, training bldg., reclamation yard, theatre, gymnasium base technical laboratory, Portsmouth Air Force Base ENG-19-016-55-894, PORTSMOUTH, N. H. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Mar. 22. CD 3/15.

▲ **MASSACHUSETTS**—Massachusetts Turnpike Auth., 80 Boylston St., **Boston**,

Grandview Constr. Corp., 740 S. Fulton Ave., Mount Vernon, N. Y. and **The Brunalli Constr. Co.**, 19 Main St., Southington, Conn. LB **$3,370,275**. Contr. 51-191 hy. and bridge constr., Ludlow, Wilbraham and Palmer. Bids Mar. 23. CD 2/23.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Continental Constr. Corp., 437 Main St., Lynnfield Center, Mass., LB **$164,000**, est. $132,000. deck replacement and constr. of inspection platform French King Bridge, Erving-Gill. Bids Mar. 22. CD 3/9, under Streets and Roads.

MASSASHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Mass.—**Campanella & Cardi Constr. Co.**, 780 Jefferson Blvd., Warwick, R. I. LB **$88,350**, est. $87,000. hy. constr. Higginscrowell Rd., Yarmouth.

Mass.—**Petricca Constr. Co.**, 534 West St., Pittsfield, Mass. LB **$155,855**, est. $165,000. state hy. reconstr. Rte. 9 (North St.), Dalton. Bids Mar. 22. CD 3/9 and 3/16.

BUILDINGS

LOW BIDS AND CONTRACTS

† **Stewart & Williams, Inc.**, Augusta, Me. LB **$397,200**. BLDG. 232 Veterans Center, TOGUS, ME. Veterans Admin., Munitions Bldg., Wash. D. C. Bids Mar. 22. CD 2/18.

▲ **Rich Bros. Constr. Co.**, 410 Park Square Bldg., Boston, Mass. CA **$1,218,221**, William E. Russell District Elementary SCHOOL, Mt. Vernon St., Dorchester, BOSTON, MASS. City, Dpt. School Bldgs., 26 Norman St., Boston, Mass. CD 3/8, under LB.

State, Dpt. Mental Health, c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. rejected bids Mar. 3, M-402 Contr. 1 service bldg. addn., Walter E. Fernald State School, Waverly Section of Belmont, WALTHAM, MASS. **$550,000**. Will re-advertise. CD 3/8, under LB.

O. Ahlborg & Sons, Inc., 48 Molter St., Cranston, R. I., CA, **$559,640**, Proj. RI-52-C-201 A-X HIGH SCHOOL Cedar Ave., EAST GREENWICH, R. I. Town School Dpt., East Greenwich, R. I. Bids Mar. 15. CD 3/23, under LB.

E. Leslie Archibald, Inc., 108 West Shore Rd., Warwick, R. I. Owner Builds. **$750,000**. 15 unit BUSINESS CENTER, Warwick Ave., WARWICK, R. I. Charles A. Randall, c/o owner, engr.-archt.

W. J. Megin Inc., 51 Elm St., Naugatuck, Conn., LB, **$570,479**, Birdsley B. Norton Elementary SCHOOL and HIGH SCHOOL addn., CHESHIRE, CONN. Town Bd. Educ., Town Hall, Cheshire, Conn. Bids Mar. 24. CD 3/14.

▲ **John Zandonella**, 70 Chase St., Bridgeport, Conn., CA, **$2,890,000**. Andrew Warde HIGH SCHOOL, Knapps Hy. and Mellville Ave., FAIRFIELD, CONN. Town High School Bldg. Comn., Town Hall, Fairfield, Conn. Bids Feb. 28, awarded Mar. 23. CD 3/4, under LB.

George L. Hickey Inc., 13 Spring St., Stamford, Conn., LB, **$829,890**. JUNIOR HIGH SCHOOL, West Rock Area NORWALK, CONN. City Bd. Educ., c/o Superintendent Schools, Norwalk, Conn. Bids Mar. 22. CD 3/7.

▲ **State P. Wks. Comr.**, State Office Bldg., Hartford, Conn., rejected bids Mar. 9, OFFICE for State Hy. Dpt., Wolcott Hill Rd., Proj. CP-S-42, WETHERSFIELD, CONN. LB **$2,889,000**. Will re-advertise. CD 3/15, under LB.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

† **N. Y., Plattsburgh** — REHABILITATION — BA About 4/27—U. S. Eng., 111 E. 16 St., New York, Zone 3, addnl. rehabilitation (Phase I) Plattsburgh Air Force Base, ENG-30-075-55-417. $500,000-$700,000. Plans deposit $40. CD 7/16.

BIDS ASKED—BUILDINGS

▲ **N. Y., Perrysburg**—HIGH SCHOOL—BA 4/19—Bd. Educ., Central School Dist. No. 1, High School Bldg., Water St., Gowanda, 1 and 2 story Junior-Senior High School. $2,150,000. Plans deposit $25. James W. Kideney & Assocs., Prudential Bldg., Buffalo, engrs.-archts.

† **Md., Edgewood**—LABORATORY—BA 4/22—U. S. Eng., P.O. Box 1715, Baltimore, Zone 3, 1 story, 47x181 ft. masonry biophysical assessment laboratory, with 68x80 ft. rear central wing, mechanical ventilation, air conditioning, utilities, site imprvs., Army Chemical Center. $500,000. Plans deposit $50. Turpin, Wachter & Assoc., 1004 N. Charles St., Baltimore, Zone 1, engrs. CD 12/9.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Arundel Corp.**, Pier 2 Pratt St., Baltimore, Md., CA **$1,194,216**, dredging and rock removal, New York and New Jersey Channels, Sect. No. 4, Rock Area 16, CIVENG-30-075-55-38, NEW YORK-NEW JERSEY. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids Mar. 3. CD 3/7, under LB.

▲† **Dutcher Constr. Corp.**, Queenstown, Md., LB **$2,197,843**. excavate 2,575,000 cu. yd. material for Grass River Lock, Seaway; 2,700 ft. dike at right angle, Long Sault Canal; S-shaped dike, 4,800 ft.; dikes use 610,000 cu. yd. material, near Massena, St. Lawrence Seaway, St. Lawrence Co., CIVENG-30-023-55-54, NEW YORK. U. S. Eng., Engineer Park, Niagara and Bridge Sts., Buffalo 7, N. Y. Bids Mar. 25. CD 3/9, under LB.

▲† **Philsan Co.**, 152 W. 42 St., New York 36, N. Y., LB **$359,504**, Sch. 1, aqueduct bridging, Serial No. ENG-30-075-55-83. Bids Mar. 24. CD 3/8;

A. D. Dougherty & Co., Plattskill, N. Y., LB, **$605,869**, Sch. 2, clearing and approach zone. Bids Mar. 24. CD 2/21; LB **$1,023,870**. Sch. I and 2 combination, at Stewart Air Force Base, NEWBURGH, N. Y. U. S. Eng., 11 E. 16 St., New York 3, N. Y.

† **County Electric Co.**, 351 N. Main St., Port Chester, N. Y., LB, **$137,042**, airfield lighting (FY 53 and FY 55) Plattsburgh Air Force Base, ENG-30-075-55-225, PLATTSBURGH, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids Mar. 24. CD 3/8.

M. A. Bongiovanni, Inc., 309 Sunset Ave., Syracuse, N. Y., CA **$732,800**. water treatment plant, WILLIAMSON, N. Y. Town Bd., of the Town of Williamson, Fire Hall, Williamson, N. Y. Bids Mar. 15. CD 2/21.

▲ **NEW JERSEY**—New Jersey Hy. Auth., 12 Broad St., Red Bank,

N. J.—**Union Bldg. & Constr. Co.**, 631 Main Ave., Passaic, N. J., LB, **$774,733**, contract MM7, Districts mowing, weed control, placing topsoil, fertilizing and seeding grass areas on Parkway in Districts 1, 2, 4, 5, 6 and 7;

N. J.—**Philip Lagana**, 39-14 209 St., Dorona, N. Y., LB, **$161,531**, Contract MM6, District 7, mowing, weed control, placing topsoil, fertilizing and seeding grass areas on Parkway between mile Posts 27 and 0);

N. J.—**Thos. Nicol Co., Inc.**, Hamilton Rd., Farmingdale, N. J., LB, **$122,849**, Contract MM5, District 6, mowing, weed control, placing topsoil, fertilizing, seeding grass areas on Parkway between mile posts 55 and 27;

N. J.—**Meadow Brook Nurseries, Inc.**, 36 Grand Ave., Englewood, N. J., LB, **$123,254**, Contract MM2, District 2, mowing, weed control, placing topsoil fertilizing and seeding, grass areas on Parkway between Mile Post 157 and 140;

N. J.—**Riverside Landscape Corp.**, 11 Park Pl., New York, N. Y., LB, **$117,920**, Contract MM4, District 5, mowing, weed control, placing topsoil, fertilizing, seeding grass areas on Parkway, between mile post 89 and 55; LB **$179,991**, Contract MM3, District 4, mowing, weed control, placing topsoil, fertilizing and seeding grass areas, Parkway, between Mile Posts 128 and 89, all foregoing on the Garden State Parkway. Bids March 24.

▲ **NEW JERSEY**—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,

N. J.—**P. T. Cox Constr. Co.**, 271 Church St., New York, N. Y., LB, **$853,178**, Contract N-18A, concrete decks

(Continued on page 86)

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N. Y. 4, N. Y.

(Continued from page 84)

for southeast viaduct from Ave. E. Interchange to vicinity of Brown Pl.; LB **$282,120.** Contract N-18C, concrete deck for Bayview viaduct from Caven Pt. Road Interchange to Bayview Ave.;

N. J.—**Woodcrest Constr. Co., Inc. & Wheeler Engr. Co., Inc.,** 369 Lexington Ave., New York, N. Y., LB, **$507,740** Contract N-18B, concrete decks for 5 bridge structures between Linden Ave. and Phillip St. in connection with Newark Bay-Hudson County extension of N. J. Turnpike, Hudson Co. Bids Mar. 22. CD 3/11.

NEW JERSEY—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,

Horn Constr. Co., Inc., 2174 Hewlett Ave., Merrick, L. I., N. Y., CA **$823,999.** Contract N-26C, 24 piers for substructure of portion of North Terminal Ramps (Section B) in connection with Newark Bay-Hudson County Exten. of N. J. Turnpike, Jersey City, Hudson Co. Bids Mar. 10, awarded Mar. 24. CD 3/14, under LB.

▲ **NEW JERSEY**—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,

C. J. Langenfelder & Sons Co., Pulaski Hy., Baltimore, Md., CA, **$1,779,677,** Contract PE-3, grading, drainage, incidental work from Delaware River to existing turnpike in connection with Penna. Ext. of N. J. Turnpike Burlington Co. Bids Mar. 3, awarded Mar. 24. CD 3/15, under LB.

NEW JERSEY—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,

Charles F. Vachris, Inc., 9024 Ditmas Ave., Brooklyn, N. Y., LB, **$1,572,493,** Contract N-10B, concrete decks for Newark Viaduct extending from Pier W 45 just west of Doremus Ave. to Pier W 93 on east side of Newark Airport Interchange of Turnpike for viaduct at the Newark Airport Interchange and west of Pier W 93 from Ramp E, Ramps F and H, Ramp G and portion of Newark Bay-Hudson County Extension in City of Newark, Essex Co. Bids Mar. 24. CD 3/11.

† **Arthur Venneri Co.,** 300 North Ave. E., Westfield, N. J., LB, **$287,374,** armament and electronics shop, theatre, related site imprvs., utilities, etc., McGuire Air Force Base, ENG-36-109-55-50, WRIGHTSTOWN, N. J. U. S. Eng., 265 Abbottsford Rd., Phila., Pa. Bids Mar. 18. CD 3/9.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Anthony Scamurra,** 3390 Genesee St., Buffalo, N. Y. Owner Builds. **$3,100,000.** 75 HOMES, Cerro Park Blvd. and Wendell St., LANCASTER, 85 HOMES, N. Forest Rd., and Union Rd., AMHBRST, N. Y.

▲ **William L. Crow Constr. Co.,** 101 Park Ave., New York 17, N. Y., CA, **$3,000,000.** 6 story, 2 bsmnts., 198 bed HOSPITAL, UTICA, N. Y. St. Luke's Memorial Hospital Center, 1634 Genesee St., Utica, N. Y.

Bibray Homes, c/o Rudolph Novak, archt., 713 Main Ave., Clifton, N. J. Owner Builds. **$380,000.** 20 HOUSES on tract on Vivien Ave. off Grand and Lincoln Blvds., EMERSON, N. J.

Woodcrest Estates, c/o John M. Gabriel, 334 State Hy. 17, Paramus, N. J., Owner Builds **$675,000.** 45 HOUSES on tract off Main St. off Kinderkamack Rd., MONTVALE, N. J.

Hickory Hill Homes, c/o Rudolph Nova, archt., 713 Main Ave., Clifton, N. J. Owner Builds. **$360,000.** 20 HOUSES on tract on Kinderkamack Rd. off New Milford Ave., ORADELL, N. J.

▲ **Somers Point Development Co.** of N. J., 750 Shore Rd., Somers Point, N. J. Separate Contracts. **$7,200,000.** 600-unit RESIDENTIAL DEVELOPMENT, New Road, SOMERS POINT, N. J.

▲ **Winson Wood Estates** c/o Walter H. Kremer, 13-00 Plaza Rd., Fairlawn, N. J., Owner Builds, **$2,300,000.** 68 HOUSES on tract of Woodcliff Ave. west of Pascack Rd., WOODCLIFF LAKE, N. J.

▲ **Orleans Constr. Co.,** 100 W. Rockland St., Phila., Pa. Separate Contracts. **$3,000,000.** RESIDENTIAL DEVELOPMENT, Cheltenham Ave., etc., PHILA., PA.

▲ **Jack Meyerhoff & Sons Co.,** 14 W. Saratoga St., Baltimore 1, Md. Owner Builds. **$1,500,000.** 300 brick DWELLINGS in groups row type on Baltimore St., Eastdale Rd., Wynbrook Rd., Eastwood Heights Section, near BALTIMORE, MD.

Charles R. Scrivener, Inc., 240 S. Hilton St., Baltimore 29, Md. CA **$475,000.** steel, concrete, masonry SHOPPING CENTER, National Pike (Rte. 40) and Ingleside Ave., CATONSVILLE, MD. Ingleside Shopping Center, Inc., 441 Equitable Bldg., Baltimore 2, Md.

▲ **George Hyman Constr. Co.,** 1010 Vermont Ave. N.W., Wash., D. C., CA, **$2,135,900,** HEADQUARTERS, 17 and DeSalles St. N.W., WASH., D. C. International Union of Operating Engineers 1003 K St. N.W., Wash., D. C. Holabird, Root & Burgee, 180 N. Wabash St., Chicago, Ill., archts. CD 3/2.

SOUTH

BIDS ASKED—BUILDINGS

Va., Denbigh—SCHOOL—BA 4/21—York County School Bd., Denbigh, elementary school, Rte. 17, near Grafton. $360,000. Plans deposit $30. Williams, Coile & Blanchard, 35 and Virginia Ave., Newport News, engrs.-archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Sawnee Electric Membership Corp., Cumming, Ga., Force Account. **$320,000.** 75 mi. rural distr. lines, and sys. imprvs., Forsyth Co., GEORGIA. Southern Eng. Co., 1000 Crescent Ave. N.E., Atlanta, Ga., engr. CD 3/17/54.

(Continued on page 88)

TOURNATRACTOR is a 208 hp tractor that *runs* on rubber instead of *crawling* on tracks.

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208 hp diesel drives through dirt-sealed anti-friction bearings to free-rolling wheels. All gears and bearings automatically lubricated . . . all parts easily accessible.

Shifts instantly...
Constant-mesh transmission eliminates delays in changing gears . . . saves vital momentum . . . gives you any gear ratio instantly.

Torque converter available...
This simple, dependable, low-pressure system provides the equivalent of an infinite number of gear ratios automatically selected to best balance load and torque.

Easier to operate...
Less jolt and jar reduces stress and strain on both operator and machine. Fingertip electric controls let operator work faster, with less end-of-shift fatigue.

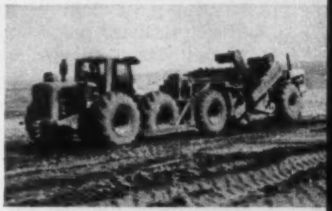
Improves safety...
Low center of gravity, all-around visibility, quick response of controls make Tournatractor exceptionally safe to operate. Multi-disc air brakes have more than *4 times* the braking surface of most big tractors and trucks.

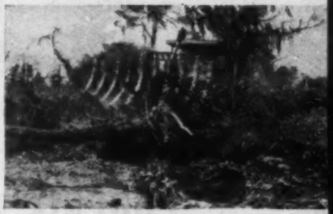
Interchangeable equipment...
Bulldozer, Angledozer, Root Rake, Snow Plow—all interchangeable—may be mounted on Tournatractor. Tilt mechanism and down-pressure attachment also available.

Easy to keep busy...
All kinds and all makes of drawbar equipment can be pulled by Tournatractor. It can also be equipped with push-block, logging winch, or tree-pusher. It goes anywhere there is work to do.

Call or write us for a Tournatractor demonstration on your job. See for yourself the advantages of this versatile, high-speed, rubber-tired tractor.

Tournatractor—Trademark T-733-G-b





208 hp
TOURNATRACTOR

FREE . . . A new 28-page book, showing all the ways Tournatractor will increase your production while lowering your costs. To get your copy, simply fill out coupon. Mail today to LeTourneau-Westinghouse Company, Peoria, Illinois. There is no obligation.

Send to: **LeTOURNEAU-WESTINGHOUSE COMPANY, Peoria, Ill.**

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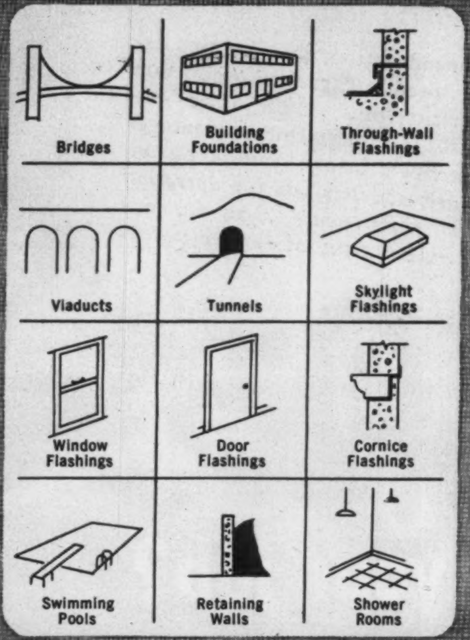
T-733-G-b

what's
your
waterproofing
problem?



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For 29 years, all over the world the Karnak Membrane Waterproofing System has proven its superiority through actual test. When you have a waterproofing problem call for Karnak. Available through waterproofing contractors or distributors or write us for information.

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Bridges and all Heavy
Structures
GROUT HOLES
Tinney Drilling Co.
Grafton, W. Va.

(Continued from page 86)

Okefenoke Rural Electric Membership Corp., Nahunta, Ga. Own Forces, **$235,000.** 85 mi. rural distr. lines and sys. imprvs., Brantly Co., GEORGIA. CD 10/20.

† **E. M. Hall Constr. Co.**, 3601 Mobile Hy., Pensacola, Fla., CA, **$263,597,** chapel and airmen's club, EGLIN AIR FORCE BASE, FLA. U. S. Eng., P.O. Box 1169, Mobile 7, Ala. Bids Mar. 15. CD 3/1.

▲† **Five Boro Constr. Corp.**, 2 Lafayette St., New York 7, N. Y., CA, **$1,418,492,** HOSPITAL, FY-55, HOMESTEAD, FLA., U. S. Eng., P. O. Box 4970, Jacksonville, Fla. Bids Feb. 9, awarded Mar. 24. CD 2/23, under LB.

▲ **MISSISSIPPI**—State Hy. Dpt., T. C. Robbins, dir., Jackson,

Miss.—**Boyd Constr. Co.**, Grenada, Miss. CA **$216,156,** est. $260,000. base, double bit. surf. tr. 10.458 mi. on un-numbered county hy. between Lobdall and Boyle, Hy. Proj. S 0607 (1), A, Bolivar Co.;

Miss.—**W. R. Fairchild Constr. Co. Ltd.**, Hattiesburg, Miss. CA **$248,775,** est. $325,000. grade, culverts, bridges 9.866 mi. Miss. Hy. No. 12 between Hollandale and Sunflower River, Hy. Proj. F 018-1 (1), Washington Co.;

Miss.—**Ferguson Bros. Constr. Co.**, Greenwood, Miss. CA **$97,195,** est. $100,000. base and double blt. surf. tr. 7.035 mi. Miss. Hy. No. 448 between Indianola and Shaw, Hy. Proj. S 0613 (3) A, Sunflower Co.;

Miss.—**Lee Constr. Co.**, Hattiesburg, Miss. CA **$165,584,** est. $190,000. grade, culverts, box bridges and bridges 3.707 mi. Miss. Hy. No. 4 between Hobo Jct. and New Site, Hy. Proj. S 0953 (1) A, Prentiss Co.;

Miss.—**J. B. Michael & Co., Inc.**, 1021 Heywood St., Memphis, Tenn., CA **$335,594**, est. $400,000. bit. surf. (plant mix) 18.722 mi., Hy. Proj. F 016-1 (3), Bolivar Co.;

Miss.—**John H. Moon & Sons**, Ridgeland, Miss. CA **$134,608**, est. $160,000. grade, culverts, bridge 0.704 mi. Miss. Hy. No. 27 between Rosella and Wanilla, Hy. Proj. 054-1 (3), Lawrence Co.;

Miss.—**O. J. Stanton & Co.**, Greenwood, Miss. CA **$107,449,** est. $135,000. grade, culverts, box bridge 4.275 mi. Miss. Hy. No. 4 between Dennis and New site,, Hy. Proj. S 0953 (2), A, Tishomingo Co. Grand total $1,305,361 Bids Mar. 22. CD 3/14.

▲† **Farnsworth & Chambers Co., Inc.**, Box 74, Houston, Tex. LB **$1,260,075,** est. $1,000,000-$3,000,000. runway and taxiway extens., Lake Charles Air Force Base, ENG-41-243-55-45, LAKE CHARLES, LA. U. S. Engr., Box 1229, Galveston, Tex. Bids Mar. 23. CD 2/24

Clinchfield Concrete Co., Kingsport, Tenn. CA **$525,501** Contr. IV, WW exten., MARYVILLE, TENN. City, Maryville, Tenn. Bids Mar. 3. CD 3/22, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Southern Eng. & Constr. Corp., 405A E. Franklin St., Richmond, Va., LB **$398,800**, est. $350,000. maintenance GARAGE, RICHMOND, VA. City, J. W. Huffman, purch. agt., Mosque Bldg., Richmond, Va. Bids Mar. 22. CD 3/8.

Maxwell & Kiker, 31 Waheela Rd., Chattanooga, Tenn., LB, **$835,981.** Ringgold Elementary SCHOOL (white); Lakeview High SCHOOL; Boynton Elementary SCHOOL; Ringgold High SCHOOL; Westside Elementary SCHOOL; Ringgold Negro Elementary SCHOOL, RINGGOLD, GA. State SCHOOL Bldg. Auth., 41 Exchange Pl. S.E., Atlanta, Ga. Bids Mar. 22. CD 3/1.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

Wis., Milwaukee—BA 4/12—City, City Hall, constr., wid'n. S. 6 St. Viaduct, $230,000. Plans deposit $10. Geo. C. Ashton, br. engr. CD 8/25.

INDIANA—BA 4/20—Indian Toll Road Comn., 309 W. Washington St., Indianapolis,

Contract C-1, grading, drainage, structures and paving approx. 2.3 mi. in Constr. Sect. C-1 of Indiana East-West Toll Road beginning at point about 700 ft. east of Indiana State Line at Toll Road Centerline Station 264 plus 00 in Lake Co. and extending southerly to point about 500 ft. south of Wolf Lake at Toll Road Centerline Station 386 plus 00 in Lake Co.,

Contract C-2, grading, drainage, structures, paving approx. 2.1 mi. in Constr. Sect. C-2 of Indiana East-West Toll Road beginning at point about 500 ft. south of Wolf Lake at Toll Road Centerline Station 386 plus 00 in Lake County and extending southerly to point about 700 ft. east of Calumet Ave. at Toll Road Centerline Station 497 plus 30.43 in Lake Co.

Contract C-1 and C-2 combination of both. Plans deposit $5 for standard spec. for Indiana East-West Toll Road; Soil plan and profiles, per set, per construction section; Plans deposit $25 for Plans, Special Provisions and Proposal Forms, per set, per construction section; Cross-Sections, per set, per Construction Section. Bid date changed. CD 2/7.

BIDS ASKED—BUILDINGS

▲† **Ill., Orland Park**—BARRACKS, etc.—BA 4/19—U. S. Eng., Merchandise Mart, Chicago, Zone 54, barracks, mess hall, readiness bldg. sewers, water etc. $1,300,000.

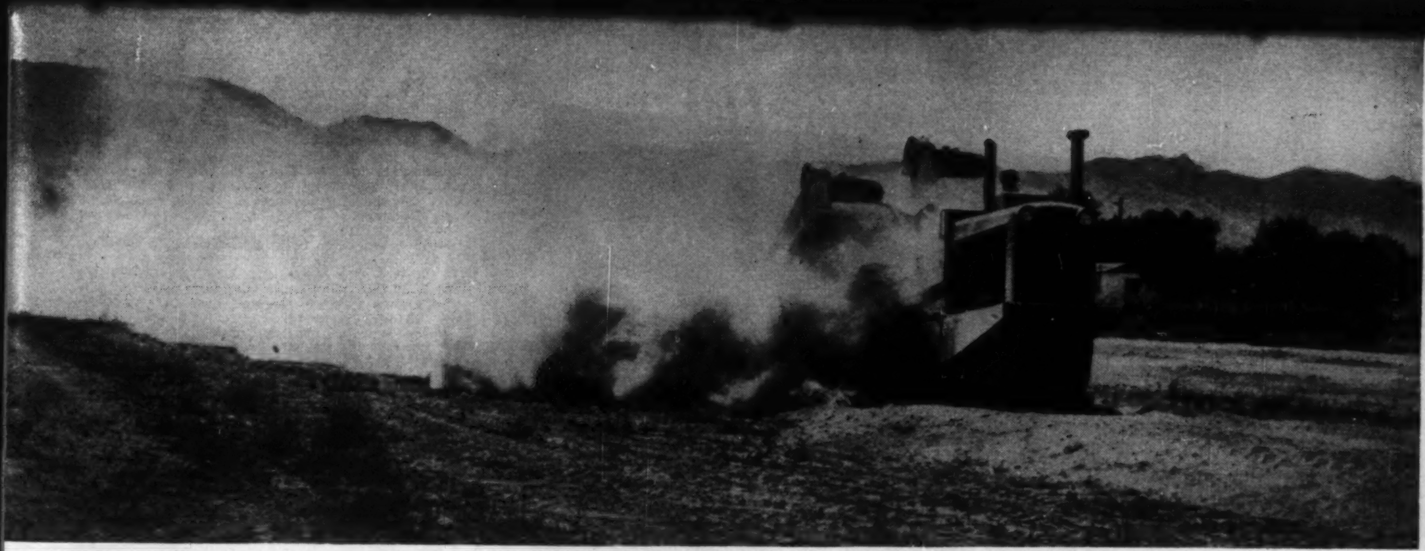
Wis., Ashland—SCHOOLS—BA 4/20—Bd. Educ., elementary school, Beaver School addn., Ellis School addn., Bay City School, Wilmarth School addn. $898,000, Plans deposit $25. L. Monberg & Assocs., 815 57 St., Kenosa, archts. CD 11/16.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Moyer Bros.**, 5 Justice Row, Charleston, W. Va., LB **$1,159,310**, est. $1,317,342, four squadron operations bldg., 4 maintenance shops, ammunition shop,

(Continued on page 90)



How to beat the dust

Get the right machine

That's the first step in overcoming dust, according to Link L. Colvin, Glendale (Arizona) contractor.

Mr. Colvin should know, too, for most of his earthmoving involves handling the powdery soil which characterizes the semi-desert area around Phoenix. Mr. Colvin has tried almost every scraper available . . . his final choice was the 2 electric-control C Tournapulls shown here leveling 10,000 yds. of very dry loam for the athletic field at South Phoenix High School.

On such work as this, the 30 mph speed of the Tournapulls carries them ahead of much of the dust . . . improves operator visibility . . . reduces amount of dirt which gets into machinery and covers the men.

Simplified construction of the Tournapull helps lick the problem, too. Eliminated are most of the usual lubrication troubles. There are no long driveshafts, no reach-rods or other parts of manual steering mechanisms, no springs, no spring hangers to worry about. All gears are enclosed . . . cannot get dirty. Electric-control system eliminates long lines of pipe and hose, pumps, valves, seals of hydraulics. Lubrication is needed only at 15 points, compared to 42 to 83 of other self-powered scrapers and 45 to 62 of common crawler-drawn scrapers.

"We're really sold!" says Colvin. "Tournapulls are *the best!* We have worked them alongside competitive machines and the 'C's' really show the others up!"

Good reasons are back of this enthusiasm. Mr. Colvin is using machines built for off-road hauling by the outfit that pioneered off-road hauling on rubber. His Tournapulls and the thousands like them have hauled more dirt over more miles of construction roads than all other makes combined. Buying this experience background gives assurance of dependable, fast, all-weather performance. With Tournapulls, you get more yards, more trips, less maintenance. You do work quicker, with less trouble, and at lowest-net-cost-per-yard.

So take Mr. Colvin's advice . . . try a Tournapull on your present job. You'll find maintenance savings alone justify standardization on LeTourneau-Westinghouse. There's a size to fit your needs.

Use a sprinkler

Watering haul roads, cuts and fills pays off by settling dust so less of it swirls around and into the machine. Visibility is improved . . . chances of accident reduced. Operators can safely haul at much higher speeds.

Keep air cleaners clean

Check cleaner oil and condenser screen at least once a day. Change oil whenever dirt reaches ½ inch in depth, or whenever oil appears too thick or heavy to spray properly. Always wash cup in solvent, wipe clean, and refill with clean oil to level indicated.

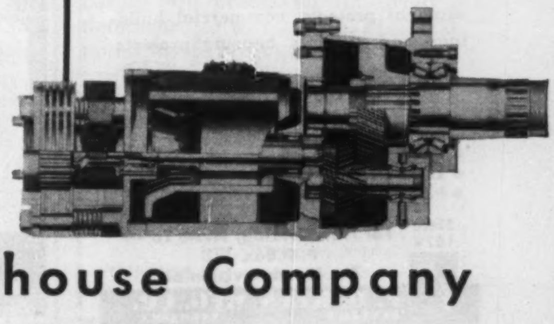
Check radiator, engine hoses

Keep all connections and hoses tight. Use compressed air to blow dust out of engine parts. Keep radiator clean.

Watch greasing equipment

It isn't enough to grease regularly . . . you must be sure all containers of grease, oil, and fuel are covered . . . that grease guns are clean . . . that maintenance is done far enough from moving vehicles to avoid most dust.

Tournapull—Trademark Reg. U.S. Pat. Off. P-716-B-b



Over 25,000 of these Tournapull electric control motors are operating today all over the world under all kinds of dirt, humidity, temperature, altitude, and operating conditions. They have needed less maintenance and have given fewer service and operating problems than any control system we have ever used or seen.

LeTourneau-Westinghouse Company

PEORIA, ILLINOIS

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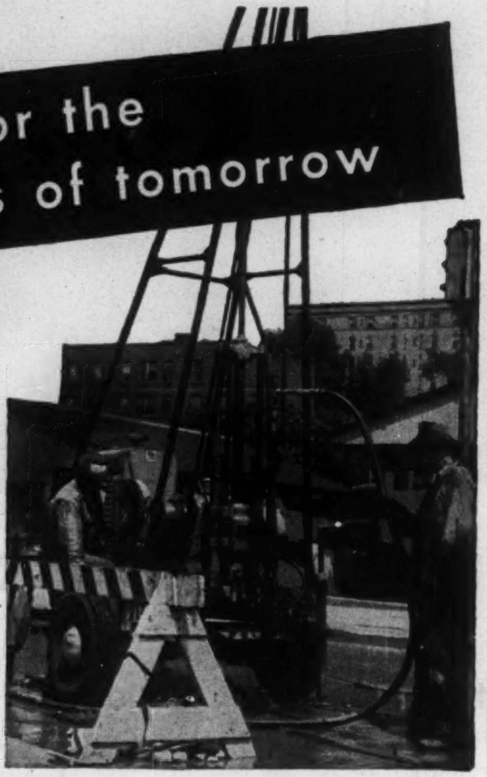

When it's better to be safe than sorry, engineers investigate underground conditions. And, that's exactly what this Acker TH drill is doing — drilling test holes over a walled-up section of the old Erie Canal preparatory to building an overhead express highway.

For low-cost, dependable sub-soil information, try an Acker on your next job. Several models available with power and type of mounting to best serve your requirements.

Write today for prices and Bulletin 30 ENR.

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(Continued from page 88)

other bldgs., Lockbourne Air Force Base, ENG-46-022-55-12, COLUMBUS, O. U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va. Bids Mar. 22. CD 2/25.

▲ **Nichols Eng. & Research Corp.**, 1637 N. Illinois St., Indianapolis, Ind., CA **$1,144,450** sludge incinerators; CA **$469,450**, refuse incinerators, INDIANAPOLIS, IND. City Bd. Sanitary Comrs., 421 N. Pennsylvania St., Indianapolis 4, Ind. Bids Mar. 14, awarded Mar. 21. CD 3/2.

ILLINOIS—State Div. Hys., Centennial Bldg., Springfield,

M. J. Boyle & Co., 2480 Elston Ave., Chicago 47, Ill., CA, **$629,178**, substructure, structural steel for railroad subway, F.A. 23, Evanston, Cook Co. Bids Feb. 25. CD 3/22, under LB.

ILLINOIS—State Div. Hys., Springfield,

M. J. Boyle & Co., 2480 Elston Ave., Chicago 47, Ill., CA, **$558,012**, c. conc. paving 0.28 mi. F.A. 23 Green Bay Road, Evanston, Cook Co. Bids Feb. 25, awarded Mar. 25. CD 3/2, under LB.

▲† **Lee Constr. Co.**, 127 N. Dearborn St., Chicago, Ill., CA **$1,331,129**, two Nike guided-missile anti-aircraft installations, vicinity of Libertyville, Lake Co., ENG-11-032-55-44, ILLINOIS. U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill. Bids Mar. 4, awarded Mar. 21. CD 3/22, under LB.

Quad City Constr. Co., 644 25 Ave., Rock Island, Ill., LB **$223,719**, Contract 5B, water mains; LB **$232,411**, Contract 5A; water mains;

Chicago Bridge & Iron Co., 332 S. Michigan Ave. Chicago 4, Ill., LB **$128,320**, four water tanks, BELVIDERE, ILL. City, Belvidere, Ill. C. K. Willett Eng. Co., Dixon, engr.

Valley Builders, Inc., Spring Valley, Ill. LB **$250,000**. sewage treatment plant, OGLESBY, ILL. City, Oglesby, Ill. CD 8/19.

L. & L. Service Co., 4445 N. 124 St., Milwaukee, Wis., CA **$334,829**. mains sewer in Brown Deer, Regent Rd., Santa Monica Blvd. and Fairy Chasm Rd., Bayside, MILWAUKEE, WIS. Metropolitan Sanitary Sewerage Comn. of Milwaukee Co., Jones Island, Milwaukee, Wis. Bids Mar. 14. Bids Feb. 18 rejected. CD 2/28, under LB.

Tomaro Contractors, Inc., 2727 E. Layton Ave., Cudahy, Wis., LB **$228,100**, storm sewers, Unit 1, Northwestern Ave., RACINE, WIS. City, City Hall, Racine, Wis. Bids Mar. 10. CD 9/9.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Mich.—**Loselle Constr. Co.**, 1555 Goddard St., Wyandott, Mich. and **Sargent Constr. Co.**, 2840 Bay Rd., Saginaw, Mich., LB **$2,106,640**, est. $2,000,000. 11.926 mi. dual 24 ft. c. conc. Detroit-Toledo Expressway from River Basin US-24A, in 58-57 C18-U IN 424 13), BM 58-57 C-19-R, Monroe Co.;

Mich.—**Julius Porath & Son**, 702 Transportation Bldg., Detroit, Mich. and **Sugden & Sivier**, 13100 Cloverdale St., Oak Park, Mich. LB **$1,584,453**, est. $1,650,000. dual 36 ft. c. conc. 1.082 mi. service road, light power and signals, John C. Lodge Expressway, Glendale to Chicago Blvd., UI 82-128 C-15 (UI 404), Wayne Co.;

Mich.—**General Pavement Contg. Co.**, 235 Union Ave. S.E., Grand Rapids, Mich. LB **$142,815**, est. $180,000. 22 ft. b. conc. surf. 8.325 mi. US-10 from Idlewild Resort east to 1½ mi. east of Chase, F 43-15 C10-R (F 184 12), Lake Co.;

Mich.—**William H. Muehlenbeck**, 1253 S. Water St., Saginaw, Mich. LB **$187,806**, est. $200,000. c. conc. 1.724 mi. M-20, F 56-26 C2-U (F 263 9), Midland Co.;

Mich.—**L. W. Edison Co.**, 924 Floral Dr. S.E., Grand Rapids, Mich. LB **$335,369**, est. $330,000. 22 ft. c. cnoc. 5.28 mi. on relocation of US-31, F 53-25 C1-R, F 62-22 R (F 128 27), Oceana and Mason Counties;

Mich.—**Sargent Constr. Co.**, 2840 Bay Rd., Saginaw, Mich. LB **$374,226**, est. $420,000. aggregate surf. 6.476 mi. M-55, M-65, F 35-8 C-R (F 134 15), SS 35-14 C9-R, SS 35-14 C-10-U (S 40 7), Iosco Co.;

Mich.—**The Taber Co.**, 125 Front Ave. N.W., Grand Rapids,, Mich. LB **$85,781**, est. $90,000. non skid surf. 4.77 mi. Truman St. and 32 St., CS 70-70 C1 (S 1022 1), Ottawa Co.;

Mich.—**Rieth Riley Constr. Co.**, 837 Emmett St., Battle Creek, Mich. LB **$146,173**, est. $190,000. 6.573 mi. M-43, M-66 from Lake Odessa to Woodland, F 8-6-C3-R, F 34-37 C-0-R (F 252 9), SS 8-32 C4-R (S 291 9), SS 8-47 C3-R, SS 8-47 C4-R (S 760 2), M 34-37 C7-R, M 34-37 C8-U, Barry and Ionia Counties;

Mich.—**William H. Gilliland**, Alpena, Mich. LB **$75,109**, est. $80,000. aggregate surf. 3.371 mi. Cathro and Bolton Rds., CS 4-36 C2 (S 1237 2), CS 4-37 C1 S 788 1), Alepna Co. Bids Mar. 23. CD 3/4, 3/9 and 3/16.

Max Frisinger Co., Ann Arbor, Mich. CA **$156,738**. Proj. No. 145, c. conc., West Bloomfield-Bloomfield, PONTIAC, MICH. Bd. Rd. Comrs. Oakland Co., 550 S. Telegraph Rd., Pontiac, Mich. Bids Mar. 10. CD 12/29.

BUILDINGS

LOW BIDS AND CONTRACTS

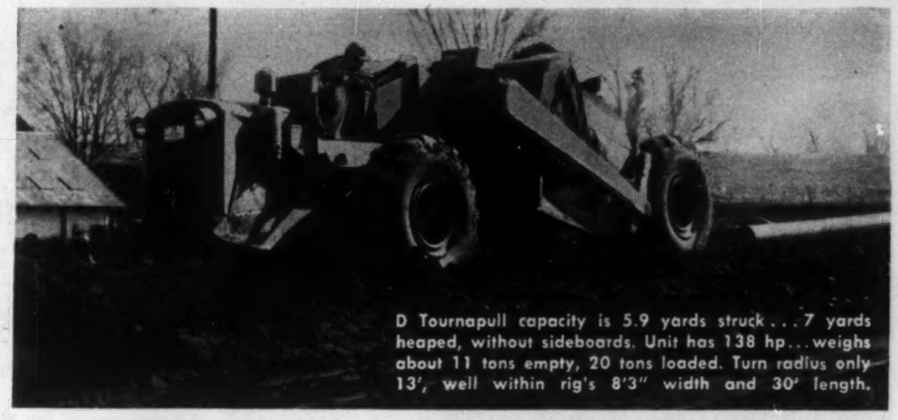
▲ **W. R. Dunkin & Son**, Anderson, Ind., CA **$1,301,961** Junior and Senior HIGH SCHOOL, Brown St. Rd. and Starte Rd. 67 south of ANDERSON, IND. Anderson Twp. School Bldg. Holding Corp., Anderson Ind. Bids Mar. 21. CD 3/11.

▲ **Thos. A. Berling & Son**, 212 S. Temple Ave., Indianapolis, Ind., CA **$2,229,000** general contract; CA **$369,000** exterior work;

Roland M. Cotton Co., 1720 E. 10 St., Indianapolis, Ind., CA **$447,307**, heating, ventilating and plumbing work, HIGH SCHOOL at Nora, INDIANAPOLIS, IND. Washington Twp. School Bldg. Corp., 711 Electric Bldg., Indianapolis, Ind. Grand total $3,045,000. Bids Feb. 2. CD 3/7, under CA.

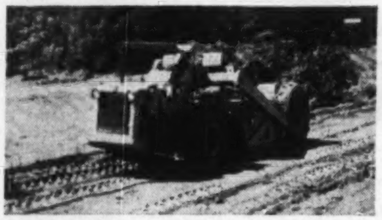
(Continued on page 92)

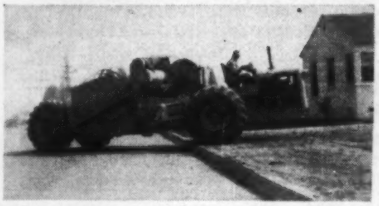
If you MOVE EARTH



D Tournapull capacity is 5.9 yards struck . . . 7 yards heaped, without sideboards. Unit has 138 hp . . . weighs about 11 tons empty, 20 tons loaded. Turn radius only 13′, well within rig's 8′3″ width and 30′ length.

you'll find this the most profitable tool in your equipment inventory





Speeds odd jobs and finish work on large contracts

The 7-yd. Tournapull will outproduce big scrapers on almost all kinds of finishing and odd job work, yet it costs only half as much to buy as many big scrapers . . . only a fraction as much to run and maintain. The rest of your fleet can stay on production dirtmoving, while your "D" using its 28 mph speed and mobility, fine-grades between forms . . . builds access roads . . . grades driveways . . . fills around culverts . . . blades shoulders . . . strips and spreads topsoil. You can work the "D" alone as a self-loader on most jobs. You can team 2 "D's" with dozer blades; or you can load it with a small tractor or patrol.

Works efficiently in fleets of larger dirtmovers

When you need help on production dirtmoving, handy "D" works profitably right along with your other rubber-tired rigs. Because it loads fast, turns fast and accelerates fast, this 7-yard machine usually will move more loads per hour than any crawler-drawn scrapers as well as bigger self-propelled dirtmovers. Low hourly ownership and operating costs, plus high load-count, help give a very low cost per yard.

Less downtime for weather, less slowdown for slippery going

Not only does the D Tournapull work faster than most other scrapers, but it often works in bad underfoot conditions when other rigs cannot. Its big tires give ample flotation and traction in muck. Two-wheel prime-mover wastes no tractive weight on extra steering wheels. Patented differential automatically transfers up to 4 times more power to the drive wheel on firmest footing, so that you can go easily through mud, sand, other soft material.

Travels job-to-job over pavement or cross-country

Your operator drives the D Tournapull job-to-job over the highway, carrying its own supplies. This saves cost of low-boy loading, blocking, trucking, unloading, plus wasted waiting time. "D's" low-pressure tires do no damage to road surface. Unit crosses rail-lines, blacktop without planking. 28 miles is only about an hour away.

Faster, easier to operate . . . less fatigue . . . safer

Good operators are always available for the D Tournapull. They find its all-pushbutton electric controls, cushioning of big low-pressure tires, and air-foam seat eliminate much fatigue. This makes for less manpower turn-over. Check our claims. We're convinced D Tournapull can substantially cut your costs. For proof, let us drive a demonstrator to your job. Mail coupon below to arrange time and place.

Tournapull—Trademark Reg. U.S. Pat. Off. DP-420-G-bw

LeTourneau-Westinghouse Company

PEORIA ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

FREE DEMONSTRATION

No obligation, no cost. Send coupon now!

Name ....

Title ....

Company ....

Address ....
(Street, City, State)

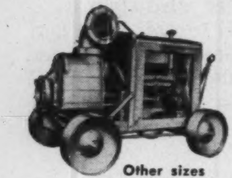
Job location ....

Date you want demonstration ....

DP-420-G-bw

MEN
WORKING

This Jaeger pumps all the water a 2" hose can handle Hi-performance Jaeger Model 2PN will actually pump all the water that can be pulled through a 2" suction line under average working conditions. Delivers 10,000 gph when operating at only 2400 to 2550 rpm (as much as 400 rpm below the speeds of similar ordinary pumps). Weighs only 160 lbs. on base, 190 lbs. on pneumatics. For complete information on this model or other Jaeger pumps, see your Jaeger distributor or send for Catalog P-4.



Other sizes 1½" to 10"

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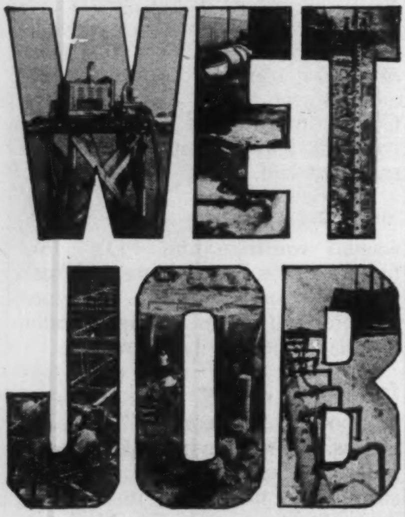

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3206 HOUSTON, HOUSTON 9, TEX.
St. Louis - Milwaukee & Twin Cities - Denver
New Orleans - Memphis

(Continued from page 90)

James Dunlop, 3705 E. 106 St., Chicago, Ill., Own Forces. **$480,000**, 30 HOMES in area of Ave. "A" and 106 St., CHICAGO, ILL.

Owner, c/o Greenberg & Finfer, 58 E. S. Water St., Chicago, Ill., Separate Contracts, **$400,000**, Hotel near South Cicero Ave. and 22 St., CHICAGO, ILL. CD 2/10.

▲ **A. L. Jackson Co.**, 308 W. Washington St., Chicago 6, Ill., CA **$1,500,000**. 4 jet cells in jet engine mfg. PLANT, CHICAGO, ILL. Ford Motor Co., 7401 S. Cicero Ave., Chicago, Ill. Albert Kahn Associated Architects & Engineers, Inc., 345 Center Bldg., Detroit, Mich., archt. Awarded Mar. 21. CD 1/26/54.

▲ **Harvey Hanson**, 1851 N. Elston St., Chicago, Ill., CA, **$1,000,000**, CHURCH, CHAPEL, GYMNASIUM, EDUCATIONAL CENTER, CHICAGO, ILL. St. Andrews Greek Orthodox Church, 5658 N. Winthrop St., Chicago, Ill. Bids Feb. 14, awarded Mar. 22 CD 2/4.

Fred Skirrow, 608 S. Darborn St., Chicago 5, Ill., CA, **$800,000**, Walton Gardens APARTMENT and OFFICE incl. RESTAURANT and STORE, CHICAGO, ILL. Arthur Rubloff Co., 100 E. Monroe St., Chicago 3, Ill. Bertrand Goldbert, 721 N. Michigan Ave., Chicago 1, Ill., archt. Awarded Mar. 23. CD 1/28.

Earl W. Cremmens, 649 Edgebrook Terrace, Elgin, Ill., Own Forces, **$600,000**, 30 HOMES, ELGIN, ILL.

▲ **Olaf Ahlstrand**, Route 3, Wheaton, Ill. Own Forces. **$1,200,000**. 40 HOMES, GLEN ELLYN, ILL.

Colby Constr. Co., 5270 Main St., Skokie, Ill., Own Forces, **$380,000**, 12 HOMES, LINCOLNWOOD, ILL.

J. Griffith & Son, 229 North La Salle St., Chicago, Ill., CA **$704,500**. general contract 1 story, 376x400 ft. MANUFACTURING PLANT and OFFICE, Austin Ave., MORTON GROVE, ILL. Minneapolis-Honeywell Regulator Co., 2753 4 Ave. S., Minneapolis, Minn. Bids Mar. 15. CD 2/24.

Inland Constr. Co., 134 N. La Salle St., Chicago 2, Ill. CA, **$600,000**. retail ladies ready to wear SHOP, 1134 W. Lake St., OAK PARK, ILL. Bramson, Inc., 1107 W. Lake St., Oak Park, Ill. Awarded Mar. 21. CD 11/9.

Colby Constr. Co., 5270 Main St., Skokie, Ill., Own Forces, **$500,000**, 20 HOMES, SKOKIE, ILL.

Colby Constr. Co., 5270 Main St., Skokie, Ill. Own Forces, **$500,000**, 20 HOMES, WILMETTE, ILL.

Jeffress-Dyer Co., P. O. Box 378, Ann Arbor, Mich. CA **$727,983**. REACTOR BLDG., ANN ARBOR, MICH. Regent of University of Michigan, W. K. Pierpont, vice pres., Plant Service Bldg., Ann Arbor, Mich. Bids Mar. 6. CD 2/3.

John C. Westphal, 12274 Coyle St., Detroit 27, Mich. CA **$681,510**. Thaddeus Kosciusko SCHOOL, Tireman Ave., DETROIT, MICH. City, Bd. Educ., 1354 Broadway, Detroit, Mich. Bids Mar. 2. CD 2/24.

Walter L. Couse & Co., 12740 Lyndon St., Detroit, Mich. CA **$575,000**. 2 story aircraft mfg. PLANT addn., 1 story FACTORY addn., Mound Rd., DETROIT, MICH. Plymouth Div. Chrysler Corp., 6334 Lynch Rd., Detroit 34, Mich.

Meyer Weingarden & Sons, Inc., 18956 Wyoming St., Detroit 21, Mich. CA Est. **$350,000**. BUILDING, incl. auditorium, folk school, offices, arts and crafts, misc. rooms, DETROIT, MICH. Labor Zionist Organization, 13722 Linwood St., Detroit 38, Mich. Louis Redstone & A. G. Agree, 1140 Book Bldg., Detroit, Mich., archts.

Meyer Weingarden & Sons, Inc., 18956 Wyoming St., Detroit 21, Mich. CA **$430,000**. Jewish TEMPLE, Ten Mile Rd. between Coolidge and Greenfield Sts., OAK PARK, MICH. Congregation Emanu-El, Theodore D. Birnkrant, chn. Bldg. Comn., Rabbi Frank E. Rosenthal, Oak Park, Mich. CD 8/5.

Harold Young Building Co., Reed Lake, Walled Lake, Mich. CA Est. **$600,000**. 50 brick ranch HOMES, Reed Lake Development, WALLED LAKE, MICH. Multi-Lakes Realty, 3060 S. Commerce Rd., Walled Lake, Mich.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

▲ **OKLAHOMA**—BA 4/26—Oklahoma Turnpike Auth., 100 N.E. 23 St., Oklahoma City, Zone 5,

Craig Co.—grade, drainage 5.053 mi. on turnpike west of Big Cabin, $722,000.

grade, drainage 2.437 mi. near White Oak, $365,000.

Rogers Co.—grade, drainage 2.683 mi. Murray Turnpike near Chelsea, $388,000. W. D. Hoback, c/ owner, engr. CD 9/19/51.

† **Tex., Austin**—SHED, etc.—BA 4/15—U. S. Eng., Box 1600, Fort Worth, shed, motor vehicle storage, Austin USAR Center, Inv. No. ENG-41-443-55-108. $100,000. CD 9/11/53.

▲† **Tex., Ellington Air Force Base**—RUNWAY, etc.—BA 4/28—U. S. Eng., Box 1229, Galveston, runway and taxiway exten., apron strengthening and airfield lighting, ENG-41-243-55-56. $1,000,000-$3,000,000. CD 2/15.

BIDS ASKED—BUILDINGS

Minn., Richfield (Minneapolis P.O.)—SCHOOL—BA 4/19—Bd. Educ., E. X. Ellenson, clk., high school addn. $500,000. Extended date. **CD 3/24.**

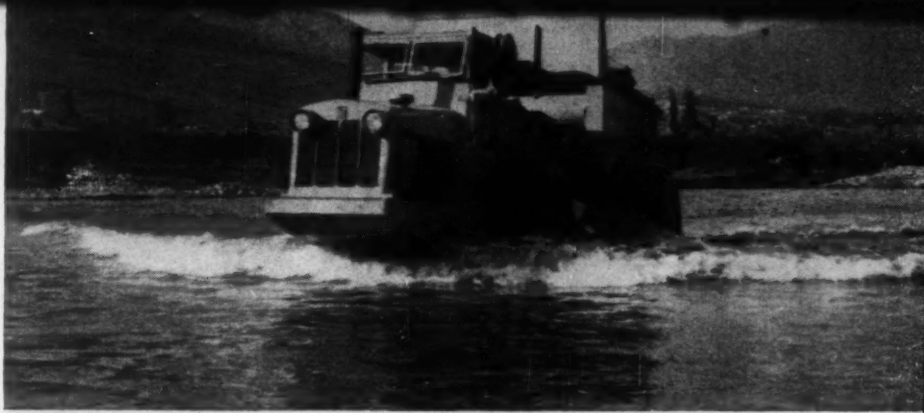
▲† **Tex., El Paso**—OFFICERS QUARTERS—BA 4/22—U. S. Eng., Box 1538, Albuquerque, N. M., constr. BOQ, 60 rooms, four 38x203 ft. BOQ, 20,000 sq. yd. paving, sidewalks, concrete curbs, Fort Bliss, Serial No. ENG-29-005-55-74. $1,000,000-$5,000,000. CD 3/14.

▲ **Mont., Billings**—SCHOOL—BA 4/27—Yellowstone County School Dist. No. 2, 3201 Fourth Ave. N., brick Junior High School, 3 bldgs., totaling 134,000 sq. ft., part 1 story, part 2 story, $1,500,000. Cushing &

Continued on page 94)

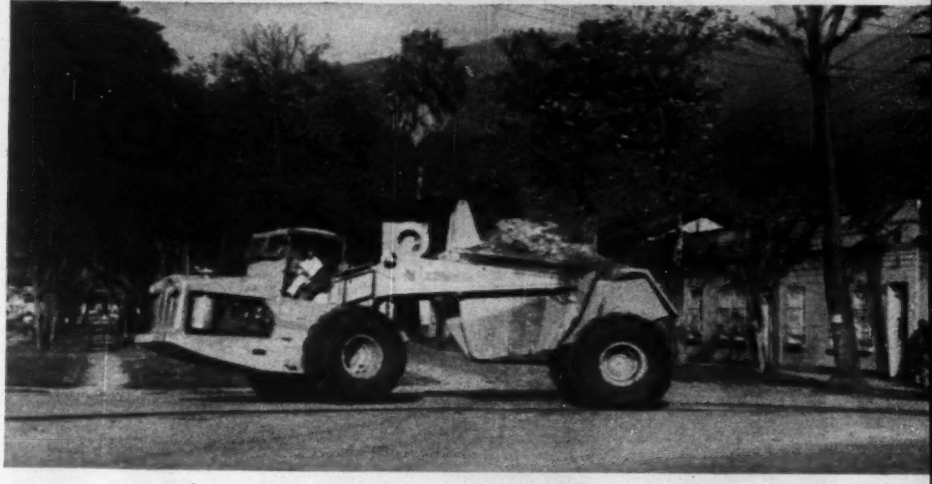
Through a river

in Colombia . . .



Through a city

of 237,000 . . .



Tournapull Rear-Dump hauls gravel for new stadium

In the city of Medellin, Republic of Colombia, this 18-ton Tournapull Rear-Dump travels a difficult route while hauling construction materials to the new municipal stadium.

First, the Rear-Dump is driven through water 1.6 to 2.6 ft. deep to be loaded with river-run gravel and sand needed for the stadium's concrete construction. Water often covers rig's undercarriage during these trips, but this has not harmed, or even affected, the electrical control system or brakes. Despite this loading in water, in more than 2,000 hours of service, machine has needed practically no repairs.

Once out of the river, haul road leads through Medellin, a city of 237,000 people. Easy maneuverability and powerful four-wheel air brakes allow Rear-Dump to drive along busy thoroughfares without delaying normal traffic or endangering other vehicles. Rear-Dump has traveled city streets for two years, and has never been involved in an accident.

Whenever you have earth to move, investigate the many advantages offered by modern LeTourneau-Westinghouse equipment. Ask your local Distributor to give you facts and figures on the size Tournapull Rear-Dump you need — 9, 18, 35, or 50 tons. He is always at your service.

Here's what city officials think of their Tournapull Rear-Dump

Dr. Jorge Ortiz Rodriguez
Mayor, City of Medellin

"We are satisfied with our Tournapull which has given us uninterrupted service for approximately two years. Cost of operation is so low that we are considering purchase of an additional unit. Safety feature of the 4-wheel air brakes permits use in our city without danger or interruption of traffic flow."

Dr. Alberto Puerta-Puerta
Chief Engineer, City of Medellin

"Tournapulls and their ability to operate in wet conditions, such as river bottoms where they can obtain large loads of heavy, water-filled pit-run gravel and sand, have proven to be one of the solutions to our problem in Medellin. Maneuverability and radius of turning is a great factor of safety for haulage through the city."

Dr. Francisco Eladio Gomez
Director of Purchases, City of Medellin

"Under conditions of haulage through river bottoms in water, and heavy loads of gravel and sand, consumption of spare parts and tire replacement have been astoundingly low. Little or no troubles have been experienced with electrical mechanisms, and operators are satisfied with the machine."

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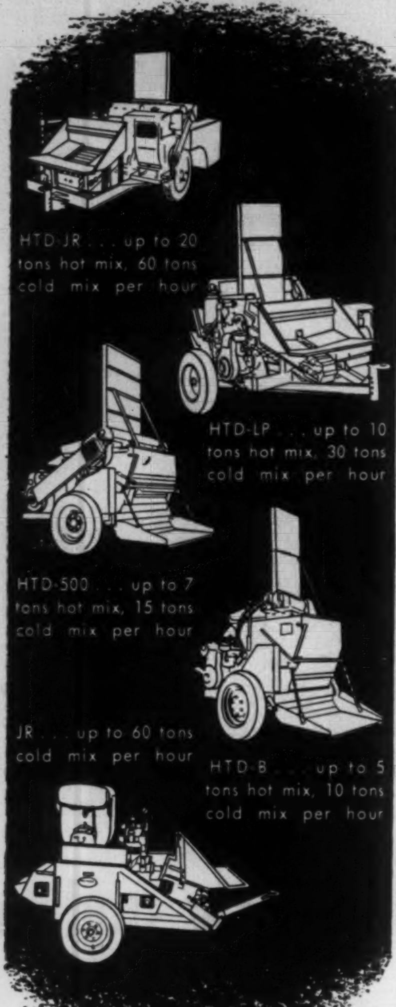
HTD-JR . . . up to 20 tons hot mix, 60 tons cold mix per hour
HTD-LP . . . up to 10 tons hot mix, 30 tons cold mix per hour
HTD-500 . . . up to 7 tons hot mix, 15 tons cold mix per hour
JR . . . up to 60 tons cold mix per hour
HTD-B . . . up to 5 tons hot mix, 10 tons cold mix per hour

. . . for resurfacing and patching in any season

DESIGNED for economy of operation and fast production, the McConnaughay line of Multi-Pug Asphalt Mixers meets every need for most resurfacing as well as all types of pavement patching. Working on location, these mixers provide the exact amounts of materials needed (never too much or too little); and McConnaughay HTD models are the only mixers which effectively remove both moisture and solvents from bituminous mixtures . . . positive assurance that patches and resurfaced areas will set up hard. Write, wire or 'phone for details and specifications.

K. E. McConnaughay
LAFAYETTE, INDIANA

(Continued from page 92)

Terrell, 1333 N. 27 St., archts.; 1 story, frame, brick elementary school, $350,000. Harry Loners, 418 N, 25 St., Billings, archt. CD 2/2.

▲ **Neb., Lincoln**—AUDITORIUM—BA 4/28—City, City Hall, municipal auditorium. $2,094,000. CD 6/23/52.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

Lysne Constr. Co., Blooming Prairie, Minn. LB **$932,161.** sewage treatment plant, ALBERT LEA, MINN. City, R. L. Van Nocker, mgr., Albert Lea, Minn. Bids Mar. 22. CD 2/24.

▲† **Woodrich Constr. Co.**, Hopkins, Minn. LB **$817,533**, Schedule 1.

S. J. Groves & Sons Co., Wesley Temple Bldg., Minneapolis, Minn. LB **$817,677.** Schedule 1-a aprons, taxiways, runway strengthening at Minneapolis-St. Paul International Airport (Wold-Chamberlain), MINNEAPOLIS, Minn. U. S. Eng., 1217 Post Office and Custom House, St. Paul, Minn. Bids Mar. 25. CD 3/4.

▲ **R. F. Ball Constr. Co.**, 1430 East Houston St., San Antonio, Tex., LB **$2,381,522.** east warehousing, Tinker Air Force Base, ENG-55-63, OKLAHOMA CITY, OKLA. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Mar. 23. CD 2/17.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Adams Bros.**, P.O. Box 310, Athens, Tex., LB **$237,720**, flexible base, one course surf. tr. 7.952 mi. Hy. FM 515, Proj. R 657-3-1, Rains and Woods Counties;

Tex.—**Austin Road Co.**, P.O. Box 1590, Dallas, Tex., LB **$209,621**, grading, structures, base, surf. 9.393 mi. Hy. FM 1701 and 911, Proj. S 1527 (2), etc., Red River Co.;

Tex.—**W. L. Barnes, Contr.**, 3102 Perry Lane, Austin, Tex. LB **$97,889**, grading, structures, base, surf. 7.5 mi. Hy. FM 379, Proj. C 1648-1-2, Sterling Co.; LB **$140,847**, grading, structures, base, surf. 9.999 mi. Hy. FM 2034. Proj. R 2010-1-1, Coke Co.;

Tex.—**B. G. Brown & Co., and J. A. Print**, 1615 S. Madison St., San Angelo, Tex., LB **$489,040**, flexible base, two course surf. tr. 13.275 mi. Hy. SH 70, Proj. S 213 (1), Nolan Co.;

Tex.—**R. C. Buckner**, P.O. Box 609, Jacksonville, Tex., LB **$115,525**, grading, structures, base, surf. 7.586 mi. Hy. FM 2095, Proj. C 1953-1-1, Milam Co.;

Tex.—**Bushman Constr. Co.**, 4635 Wyandotte St., Kansas City, Mo., LB **$173,604**, grading, structures, pavement wid'n. and asph. 4.267 mi. Hy. FM 524, Proj. R 1004-1-6, Brazoria Co.;

Tex.—**Centex Paving Co.**, 217 K-W Bldg., San Antonio, Tex. LB **$100,646**, b. conc. 32.279 mi. Hy. SH 55. Proj. C 234-1-4, etc., Edwards Co.;

Tex.—**Collins Constr. Co. of Texas**, P.O. Box 1192, Austin, Tex., LB **$104,079**, b. conc. 15.424 mi. Hy. US 80 and FM 101, Proj. C 7-3 & 4—14 & 34, etc., Eastland Co.;

Tex.—**Cooper & Woodruff**, 222 Mays Bldg., Amarillo, Tex. LB **$228,630**, flexible base, b. conc. 5.771 mi. Hy. US 60, Proj. F 625 (5), Gray Co.;

Tex.—**Joe Davidson and Dew Constr. Co.**, P.O. Box 439, Terrell, Tex., LB **$277,584**, grading, structures, base, and surf. 8.911 mi. Hy. FM 1836, Proj. S 1994 (1), etc., Kaufman Co.;

Tex.—**J. M. Dellinger, Inc.**, P.O. Box 4227, Corpus Christi, Tex., LB **$299,794**, grading, structures, foundation course, one course surf. tr., b. conc. 10.263 mi. Hy. US 181, Proj. F 266 (6), Karnes Co.;

Tex.—**F. & C. Engineering Co.**, P.O. Box 2426, Houston, Tex. LB **$660,810**, flexible base, b. conc. 18.69 mi. Hy. SH 73, Proj. F 1052 (24), Jefferson Co.;

Tex.—**Foley & Williams, Contrs.**, 243 Owen Bldg., Tyler, Tex. LB **$85,416**, grading, structures, base, surf. 5.253 mi. Hy. FM 1734, Proj. S 1743 (2), Titus Co.;

Tex.—**Gilvin-Terrell, Inc.**, Amarillo, Tex., LB **$134,788**, flexible base, two course surf. tr. 8.811 mi. Hy. SH 101, Proj. C 332-2-7, Mitchell Co.;

Tex.—**F. C. Herrling**, Kurten, Tex., LB **$111,981**, flexible base, b. conc. 3.624 mi. Hy. US 75, Proj. C 166-3-11, Freestone Co.;

Tex.—**T. F. Jones Constr., Inc.**, P.O. Box 5126, Lubbock, Tex., LB **$186,276**, flexible base, one course surf. tr., shoulders, three course surf. tr. 13.518 mi. Hy. SH 290 and FM 2195, Proj. C 130-1-8, Cochran Co.;

Tex.—**Kerr & Middleton**, Box 5065, N. College Station, Lubbock, Tex., LB **$75,266**, grading, structures, base, surf. 8.731 mi. Hy. FM 1064, Proj. R 1255-1-2, etc., Dawson Co.;

Tex.—**George Kies**, P.O. Box 5187, Austin, Tex., LB **$136,154**. seal coat 133.783 mi. Hy. US 190, 183, etc., Proj. C 129-1-8, McCulloch, San Saba, Mills, Lampasas, Brown, Stephens Counties, etc.;

Tex.—**Ernest Loyd**, P.O. Box 1120, Fort Worth, Tex., LB **$77,512**, flexible base, two course surf. tr. 2.583 mi. Hy. Acc. Rd. Proj. D-AD 8 (2), McLennan Co.; LB **$134,708**, addnl. shoulders and b. conc. 16.629 mi. Hy. US 90, Proj. C 29-2-24, Guadalupe Co.;

Tex.—**Holland Page**, P.O. Box 1181, Austin, Tex., LB **$144,859**, seal coat 120.703 mi. Hy. FM 38, 898, 114, 1767, 121, 814, 815, 198, 903, 1753, etc., Proj. C 435-1-15, etc., Lamar, Fannin, Red River, Rains; Grayson, Delta, Hunt and Hopkins Counties;

Tex.—**Dan Pennington**, Grapeland, Tex., LB **$88,923**, grading, structures, base, surf. 5.365 mi. Hy. FM 1366, Proj. S 1982 (1), Freestone Co;

Tex.—**J. W. Perry**, 501 Insurance Bldg., San Antonio, Tex., LB **$274,408**, flexible base, b. conc. 7.352 mi. Hy. US 81, Proj. C 15-9-13, Williamson Co.; LB **$155,497**, grading, structures, base, surf. 14.427 mi. Hy. FM 569, Proj. R 1026-2-1, Eastland Co.;

Tex.—**Public Constr. Co.**, P. O. Box 380, Denton, Tex., LB **$604,230**, b. conc. 73.228 mi. Hy. US 271, 79, SH 64, 153 and 259, Smith, Rusk and Gregg Counties;

Tex.—**Reynolds & Huff**, P. O. Box 88, Tyler, Tex., LB **$94,646**. grading, structures, base, surf. 6.124 mi. Hy. FM 2139, Proj. R. 2066-1-1, Cherokee Co.;

Tex.—**Jeff Richards**, 515 Hackberry St., Clifton, Tex. LB **$77,727**, b. conc. 14.406 mi. Hy. US 81, Proj. C 15-6-17, etc., Bell Co.;

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Tex.—**South Texas Constr. Co.**, P. O. Box 3536, Corpus Christi, Tex., LB **$497,749**, flexible base, b. conc. 13.545 mi. Hy. US 281. Proj. C 220-4-4, Cameron Co. Bids Mar. 22. CD 3/9, 3/7, 3/1.

Southwestern Bell Telephone Co., 1121 Capitol St., Houston, Tex. Own Forces. **$250,000**, laying above and underground telephone lines, North Sect. of HOUSTON, TEX. CD 1/12.

H. B. Zachry Co., Constr. Div., Box 2570 San Antonio, Tex., LB **$295,144**, est. $275,000. International Airport Apron exten., appurtenant grading, drainage, field lighting, Proj. No. 9-41-080-507, SAN ANTONIO, TEX. City, City Hall, Military Plaza, San Antonio, Tex. Bids Mar. 21. CD 3/9.

BUILDINGS

LOW BIDS AND CONTRACTS

H. N. Leighton Co., 716 Seventh St. S., Minneapolis, Minn. LB **$464,000**. general contract. Patrick Henry High SCHOOL, 2020 43 Ave. North, MINNEAPOLIS, MINN. Bd. Educ. H. Held, archt.-engr., 801 Broadway N.E., G. R. Arneson, city purch. agt., 301 City Hall, Minneapolis, Minn. Bids Mar. 22. CD 2/24.

Westinghouse Electric Corp., 2303 N.E. Kennedy St., Minneapolis, Minn. CA **$287,750**. TURBINE GENERATOR UNIT. CA **$92,395**, SWITCHGEAR and UNIT SUB-STATION,

Fuel Economy Engineering Co., New York Bldg., St. Paul, Minn. CA **$259,771**. STEAM GENERATING UNIT for power plant, OWATONNA, MINN. City, P. Utilities Comn., 208 S. Walnut St., Owatonna, Minn. Grand total $639,916. Bids Feb. 15. CD 2/9.

▲ **Jayeff Co., Inc.**, 730 Hennepin Ave., Minneapolis, Minn. Owner Builds. **$15,000,000**. 1,000 HOUSES, on Hy. 100, ¼ mi. east of White Bear Ave., WHITE BEAR LAKE, MINN. S. C. Smiley, 1645 Hennepin Ave., Minneapolis, Minn., archt.

▲ **Gamble Constr. Co.**, 804 Pine St., St. Louis 1, Mo. CA Est. **$1,000,000**. 3 story, 302x485 ft. brick, rein.-con. WAREHOUSE, Gustine and Bingham Aves., ST. LOUIS, MO. Brown Shoe Co., 8300 Maryland Ave., Clayton 24, Mo. Bids Mar. 10. CD 2/24.

Linbeck Constr. Co., 2720 Saint St., Houston, Tex. CA **$628,500**, Sect. 1, SHOPPING CENTER UNIT, HOUSTON, TEX. Center, Inc., c/o J. C. Epps, Jr., 12157 Kathryn Ct., Houston, Tex. CD 3/4, under LB.

Linbeck Constr. Corp., 2720 Saint St., Houston, Tex. CA **$532,928**. Elementary SCHOOL No. 1, area at South Houston, PASADENA, TEX. Pasadena Independent School Dist., Pasadena, Tex. Bids Mar. 17. CD 3/24, under LB.

▲ **Robert E. McKee General Contractors Inc.**, 221 Washington Ave., Santa Fe, N. M., LB **$1,443,000**, first phase women's DORMITORY, ALBUQUERQUE, N. M. University of New Mexico, Bd. of Regents, Albuquuerque, N. M. Bids Mar. 1. CD 1/11.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Calif., Muroc**—FACILITIES, etc.—BA 4/20—U. S. Eng., 751 S. Figueroa St., Los Angeles, research laboratory facilities, ENG-04-353-55-97, $750,000; extending water supply for hangar deluge system, ENG-04-353-55-121, $100,000, both at Edwards Air Force Base. CD 8/18.

BIDS ASKED—BUILDINGS

▲ **Calif., Long Beach**—SCHOOL—BA 4/15—Long Beach Bd. Educ., 715 Locust Ave., Robert A. Millikan High School. $4,850,000. Extended date. Hugh Gibbs, 441 E. 1 St., archts. CD 3/16.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

WASHINGTON—State Hy. Comn., Olympia, Wash.—**P. J. Anderson & Son**, 13501 Aurora Ave., Seattle, Wash., LB **$396,222**. clearing, draining, grading, surf. 1.126 mi. Primary State Hy. No. 1, Mount Vernon to Skagit River, F.A.P. Uno. BIN 001-5 (11), Skagit Co.;

Wash.—cancelled bids to have been opened Mar. 22, clearing, draining, surf. b. conc. paving 1.933 mi. Eatonville cut off Rd. F.A.S. S 0391 (2) Pierce Co. CD 3/7.

BUILDINGS

LOW BIDS AND CONTRACTS

George A. Fuller Co., 3100 W. 8 St., Los Angeles, Calif., CA **$300,000**. 56,111 sq. ft., WAREHOUSE ADDN., EAST LOS ANGELES, CALIF. The Sperry & Hutchinson Co., 114 Fifth Ave., New York, N. Y. A. Epstein & Sons, 2011 Pershing Rd., Chicago, Ill., engrs.

L. E. Dixon Co., 409 S. California St., San Gabriel, Calif., CA **$765,000**, ADMINISTRATION, MORTUARY and BOILER BLDGS., WHITTIER, CALIF. Rose Hills Memorial Park, 4826 S. Workman Mill Rd., Whittier, Calif. A. C. Martin & Assocs., 333 S. Beaudry St., Los Angeles, Calif., engrs.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Ont., Goderich—HARBOR REPAIRS—BA 4/13—Dpt. P. Wks., Hunter Bldg., Ottawa, harbour works repairs, $600,000. Plans deposit $25. J. P. Carriere, c/o owner, engr.

Ont., Clinton—M. E. SECTION EXTEN.—BA 4/14—Defence Constr. Ltd., 56 Lyon St., Ottawa, M. E. section exten., R. C. A. F. Station $350,000. Plans deposit $100.

New Powerhouse on wheels!
"CW"

Both the 5 and 10KW models are available with 2-wheel trailer, 4-wheel dolly, or skid-mounting.

Trailer-mounted 5 or 10KW

ONAN Electric Plant goes anywhere!

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BIDS ASKED—BUILDINGS

▲ **Man., Winnipeg** — HOSPITAL — BA 5/18 — Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Deer Lodge Hospital Exten. $4,500,000. Plans deposit $500. E. A. Gardner, c/o owner, archt. CD 2/11/54.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

Canadian Dredge & Dock Co. Ltd., Harbor Commission Bldg., Toronto, Ont., CA **$519,421**, Contract No. 7-55, partial bridge structure river portion on Queen St., W. (Humber River);

Domex Co. Ltd., 1323 Bay St., Toronto, Ont., CA **$154,500**, Contract 6-55, underpass to Queen St. W. exten. at Riverside Dr., first stage of Lakeshore Expressway, TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids Mar. 21. CD 3/16.

BUILDINGS
LOW BIDS AND CONTRACTS

▲ **Procon Constr. Co. Ltd.**, 40 Advance Rd., Toronto, Ont. CA **$1,500,000**, new gasoline processing unit, at Shellburn REFINERY, BURNABY, B. C. Shell Oil Co., Burnaby, B. C. Awarded Mar. 25.

▲ **Dawson & Hall Ltd.**, 775 Clark Dr., Vancouver, B. C., LB **$2,484,326**, rein.-con. CORRECTIONAL INSTITUTE, HANEY, B. C. B. C. Govt., Douglas Bldg., Victoria, B. C. Bids Mar. 24. CD 2/1.

▲ **Canadian General Electric Co. Ltd.**, Peterborough, Ont. CA **$15,000,000.** ATOM POWER STATION, CHALK RIVER, ONT. Ontario-Hydro-Electric Power Comn., University Ave., Toronto, Ont. CD 2/5/53.

▲ **Principal Investments Ltd.**, 133 Richmond St. W., Toronto, Ont. Owner Builds, **$10,000,000.** SHOPPING CENTER, incl. department store and 60 other stores, on 50-acre site on Hy. 2 and Stevenson's Rd., OSHAWA, ONT.

▲ **Richelieu Heights, Inc.**, c/o Wiggs, Lawton & Walker, archts., 4350 Sherbrooke St. W., Montreal, Que., Owner Builds, **$3,750,000.** 250 HOMES in housing program at St. Hilaire, MONTREAL, QUE. Wiggs, Walford, Frost & Lindsay, 4350 Sherbrooke St. W., Montreal, Que., engrs.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **ALASKA**—BA 4/26—Alaska Road Comn., Dpt. Interior, Juneau,

surf. tr. 7.23 mi. Palmer-Wasilla Rd. Plans deposit $10. Extended date. W. J. Niemi, ch. engr. CD 3/7.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

▲† **Peter Kiewit Sons' Co.**, 1300 Aloha St., Seattle, Wash., LB, **$4,807,810**, est. $4,611,802 air force auxiliary facilities, for Air Force Base, Inv. 55-46, GALENA, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Mar. 23. CD 3/14.

Morrison-Knudsen Co., Inc., 319 Broadway, Boise, Idaho, LB **$624,000**, est. $750,000. 27x32 ft. rein.-con. or masonry power house, rockfill or concrete arch dam, 5,000 ft. 20 and 14 in. penstock;

F. E. Wilder, R. F. D. 11, Olympia, Wash., LB **$186,494.** 16.8 mi. 22,000-volt transmission line and control circuit, PETERSBURG, ALASKA. Town, Town Hall, Petersburg, Alaska. Bids Mar. 19. CD 2/18.

Proposed Projects

WATER SUPPLY

Calif., Escondido—Rincon Del Diablo Municipal Water Dist., voted **$650,000** bond Mar. 15, constr. distr. system. CD 2/15.

▲ **Ga., Decatur**—Bd. Comrs., De Kalb Co., Court House, Robert & Co. Assocs., as engineers, 96 Popular St. N.W., Atlanta, Ga., have drawn up the following plan; 1955 **$1,800,000**, incl. new water mains and 5 m.g. storage well, filter plant and settling basin addns., addnl. pumps; 1956, **$1,250,000**, water main extensions; 1957, **$930,000** water main extens. CD 2/5/54.

Ky., Prestonsburg—City, imprv. present WW, water plant, sewage facilities. **$500,000**, Howard K. Bell, 553 S. Lime St., Lexington, consult. engr.

Neb., Omaha—Metropolitan Utilities Dist., 18 and Harney Sts., primary basin imprvs. for Water Dpt. **$597,000.** J. C. Detweiler, c/o owner, water engr.

O., Wapakoneta—City, Richard Brading, mayor, WW program, reservoir 15-acre tract; 500,000 gal. elevated storage tank in south part of city; new aeration and filtration plant; underground salt and brine pit; recondition present water softening sys.; new receiving well; approx. 12,000 ft. new water mains. **$575,000.**

▲ **Wash., Bellingham**—City, City Hall, imprv. water distr. sys. **$2,000,000.** Cunningham & Assocs., Portland Trust Bldg., Portland, Ore., consult. engrs.

SEWERS, WASTE DISPOSAL

Mass., Clinton—Town, Bd. Selectmen, 242 Church St., sewage disposal plant. **$600,000.** Metcalf & Eddy, 1300 Statler Bldg., Boston, consult. engrs.

▲ **Utah, Salt Lake City**—Salt Lake City Corp., Roy W. McLeese, engr., City-County Bldg., sewerage disposal plant, near 1250 W. & 15 St. N., **$2,500,000.** CD 9/21/53.

▲ **Que., Montreal**—City, City Hall, collector sewer in Parish of St. Leonard de Port Maurice. **$1,327,000.** CD 10/25/44.

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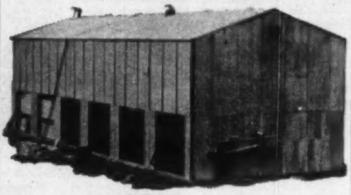

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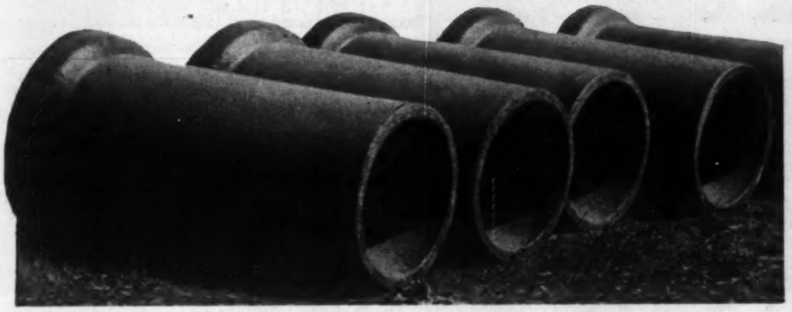

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PUBLIC HEALTH When the city was alarmed by a polio outbreak in the neighborhood of an orphanage, investigation showed that breaks in an old non-clay sewer pipe allowed sewage to flow into a creek bordering the institution. Medical authorities suspected a connection between the polio epidemic and the sewage overflow. Clay Pipe was installed as a public health measure.

INDUSTRIAL EXPANSION. In two huge new industrial areas opened by the Waco Industrial Development Association, Clay Pipe was used exclusively to handle the chemicals, dyes, acids, and other corrosives commonly found in industrial sewage.

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City officials directing the project include Mayor H. F. Connally, Jr., City Manager Jack Jeffrey, and City Engineer Eugene Shields. Private Contractors: J. D. George & Co., Rogers Smith Construction Co., and Parks and Andrews.

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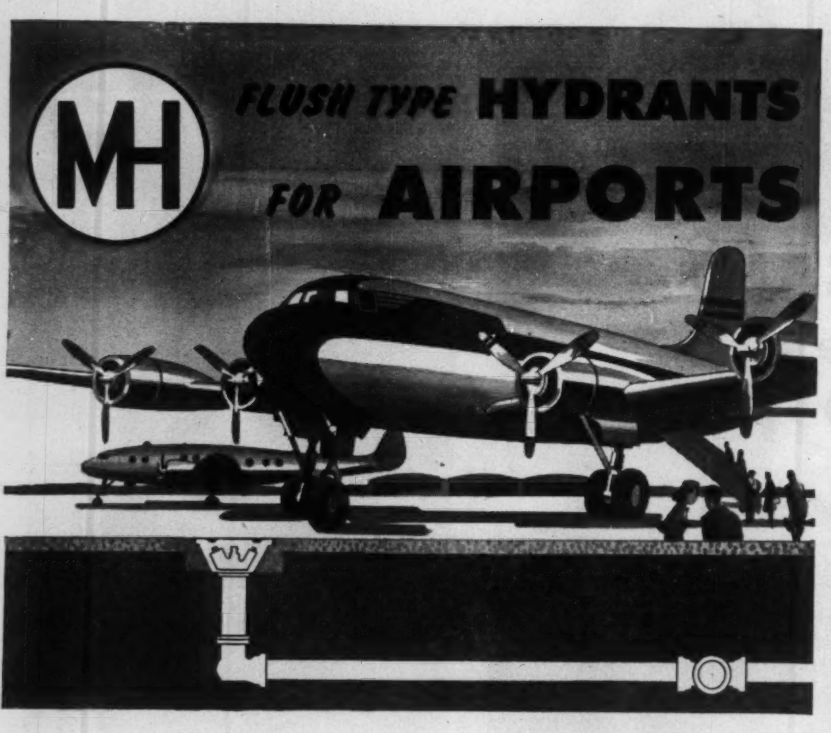

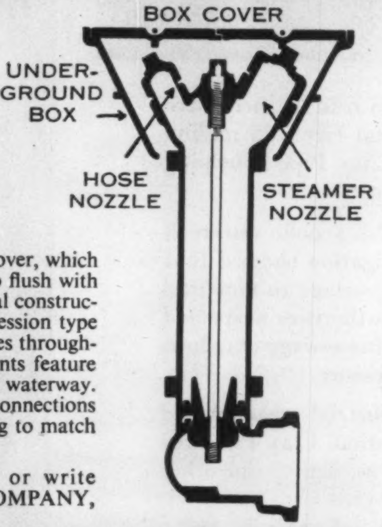

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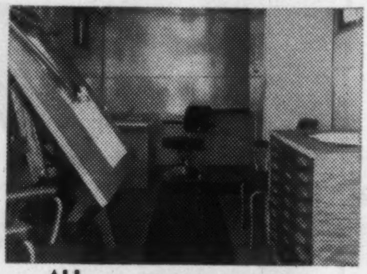

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(Continued from page 96)

STREETS AND ROADS

▲ **Ga., Atlanta**—City, City Hall, 5.4 mi. connector between south leg of city's expressway system and Roosevelt Hy., new facility can be used as an access road to Atlanta Airport. **$3,500,000.** CD 7/21/52.

▲ **INDIANA**—Indiana Toll Road Comn., Old Trails Bldg., 309 W. Washington St., Indianapolis, Zone 4, surveying through J. E. Greiner Co., 1201 St. Paul St., Baltimore, Md., North-South Route through Lake, Newton, Jasper Newton, Tippecanoe, Montgomery, Boon and Hendricks Counties. Est. **$178,000,000.** Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York 6, N. Y., traffic engrs. CD 2/25/54.

O., Cleveland—Comrs. Cuyahoga Co., Court House, Zone 14, regrading, paving south end of E. 49 St., in Cuyahoga Heights, known as E. 49th Street Hill. **$500,000.** Albert S. Porter, Standard Bldg., engr. CD 11/13/51.

Tex., Port Arthur—City, street imprvs., paving. **$700,000.** CD 12/12/50.

▲ **Ont., Toronto**—City, City Hall, pavement repair, **$3,400,000;** sidewalk repair, **$2,800,000.** CD 1/23/53.

LATIN AMERICA

▲ **Mexico, Matamoros**—Sria. de Recursos Hidraulicos, P. de la Reforma 69, Mexico City, WW, sewerage. **$1,920,000.**

PUBLIC BUILDINGS

▲ **Calif., Azusa**—SCHOOL—Gladstone School District, 18022 E. Gladstone St., plans by Balch, Bryan, Perkins, Hutchason, 2933 Rowena Ave., Los Angeles, un-named elementary school, **$500,000;** Ben Lomond School, **$500,000.** CD 12/21.

Calif., Glendora—SCHOOL—Glendora Bd. Educ., 440 W. Foothill Blvd., plans by Wilbur Harrison, 812 W. Eighth St., Los Angeles, 1 story, 36,000 sq. ft. concrete block Sellers Elementary School. **$500,000,** Quinton Engineer Ltd., 812 W. Eighth St., Los Angeles, consult. engrs.

▲ **Calif., Long Beach**—SCHOOLS—Long Beach Bd. Educ., 715 Locust Ave., plans by Kenneth Wing, 30 Linden Ave., Herbert Hoover Junior High School **$2,000,000;** 104,000 sq. ft. Cecil B. De Mille Junior High School, **$2,000,000.** CD 11/8/54.

▲ **Calif., Oceanside** — SCHOOL — Oceanside - Carlsbad Union High School District, Oceanside, plans by Kistner, Curtis & Foster, Spreckles Bldg., San Diego, 500-student Senior High School, **$1,200,000.** CD 2/18.

Calif., Placentia—SCHOOL—Placentia School Dist., **$500,000** bond election May 20, school constr.

▲ **Calif., San Diego**—COUNTY HEALTH CENTER—San Diego Co., 1600 Pacific Hy., 49,000 sq. ft. health center, **$1,000,000.** CD 10/31/49.

Calif., Selma—SCHOOLS—Selma Union High School Dist., Selma, **$790,000** bond election June 3, school. CD 6/17.

Calif., Ventura—SCHOOL—Ventura School Dist., **$900,000** bond election May 18, schools.

Colo., Colorado Springs—SCHOOL—School Dist. No. 11, El Paso Co., 406 N. Weber St., voted $236,000 bonds, new high school and present elementary and high school addns. in Harrison School Dist. and southeast Colorado Springs suburb. **$501,000.** CD 10/18.

▲ **Del., Wilmington**—SCHOOL—Mount Pleasant Special School Dist., Phila. Pike, Wilmington, plans by Dollar, Bonner & Blake, 1009 W. Washington St., high school. **$2,000,000.** CD 2/7/52.

▲ **D. C., Wash.**—HOUSING—National Capital Housing Auth., 1728 L St. N.W., plans by Hilyard R. Robinson, 1927 11 St. N. W., 400-unit Arthur Capper Dwellings, DC 1-20, **$3,000,000;** plans by Berla & Abel, 1636 Conn. Ave. N.W., 456-unit Eye to "N" Sts., 3 and Delaware Ave. S.W., D. C. 1-21, **$4,000,000.**

Ill., Downers Grove—SCHOOL—Bd. Educ., Downers Grove, plans by Louis C. Kingscott, 306 1 Ave., Sterling, Junior High School. **$800,000.**

▲ **Ill., Tinley Park**—MEDICAL SURGICAL HOSPITAL—State of Illinois, Springfield, plans by Skidmore, Owings & Merrill, assoc. archts., 100 W. Monroe St., Chicago, Zone 3, addn. wing to medical and surgical hospital, employees housing, laundry and stores. **$5,843,800.** CD 6/12/53.

▲ **Ky., Lexington**—SCIENCE—University of Kentucky, S. Lime St., plans by Brock & Johnson, 159 Barr St., science bldg. **$2,700,000.** CD 10/2/51

Me., East Millinocket—SCHOOL—Town, School Dpt., plans by Crowell, Lancaster & Higgins, 6 State St., Bangor, high school. **$500,000.**

▲ **Mass., Sharon**—SCHOOL—Town, Bldg. Comn., plans by Anderson-Nichols & Co., 150 Causeway St., Boston, high school. **$2,600,000.** CD 9/17.

Mich., Grand Rapids—SCHOOL—City, Bd. Educ., 143 Bostwick Ave., plans by Roger Allen & Assoc., 1126 Grand Rapids National Bank Bldg., 2 story, L-shaped Hall School, **$550,000.** CD 8/2/51.

▲ **Mich., Royal Oak**—SCHOOL—City, Gladys Holmes, clk., voted **$6,900,000** bonds Mar. 14, new high school, existing high school addn., Junior High and Elementary Schools. O'Dell, Hewlett & Luckenbach, 950 N. Hunter Blvd., Birmingham, archts. CD 1/27.

Mich., South Haven—POWER PLANT—City, City Council, power plant, double capacity of electric plant. **$900,000.**

Minn., Kerkhoven—SCHOOL—Bd. Educ., E. W. Solyet, supt., voted **$575,000** bonds Mar. 8, grade school unit

(Continued on page 100)

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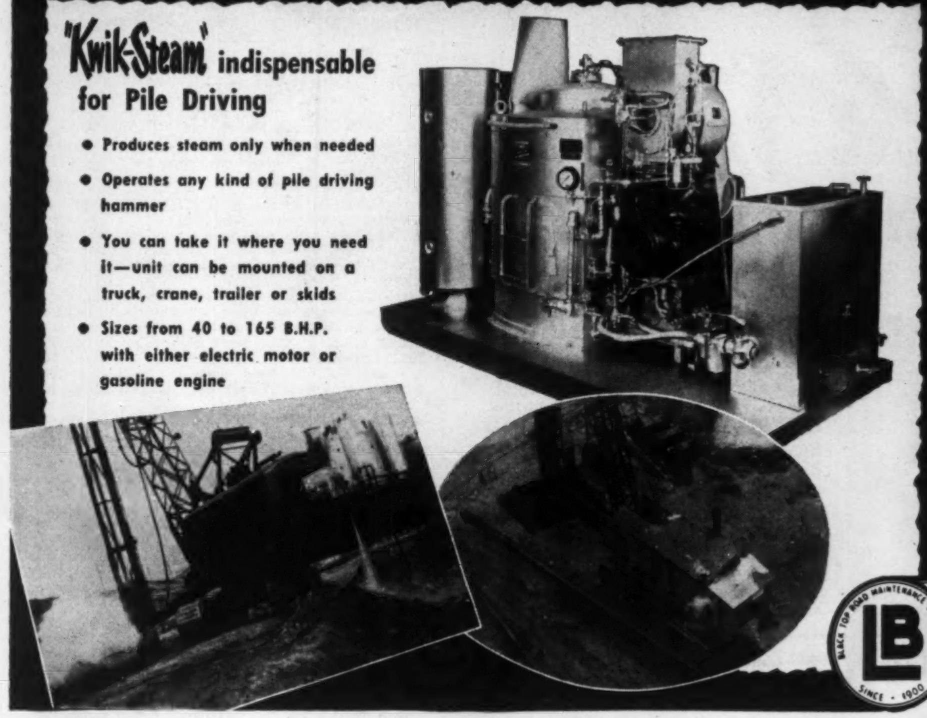

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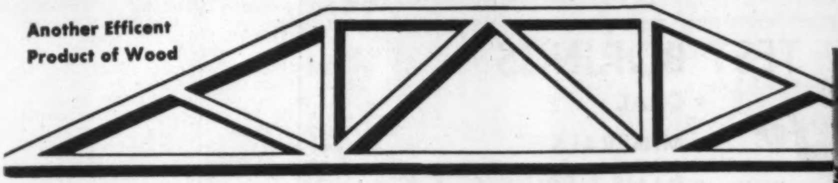

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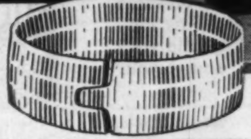

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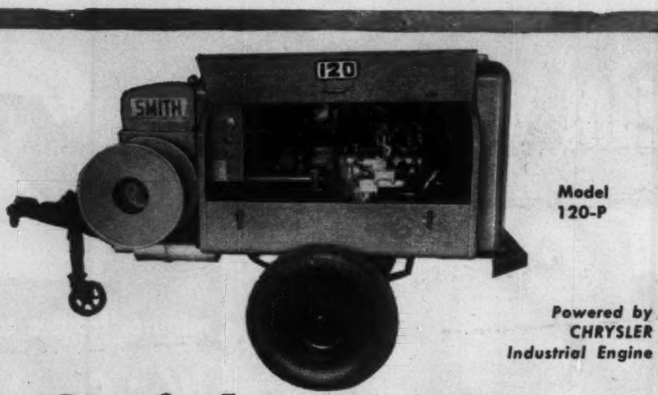

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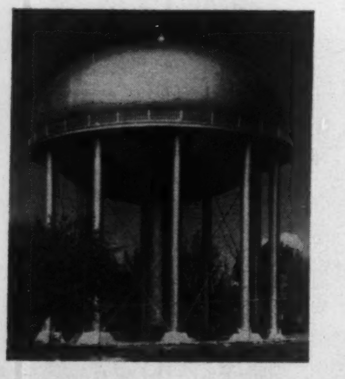

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(Continued from page 98)

comprising 3 classrooms, small gymnasium, high school addn., comprising gym-auditorium vocational wing, E. H. Schmidt & Co., Mankato, archts. CD 1/10.

▲ **N. J., Trenton**—OFFICE BLDGS.—State Dpt. Purchase & Property, State House, Trenton,

office bldg. for N. J. Dpt. Labor & Industry on Parkway Ave., Ewing Twp., **$5,060,000.**

office bldg. for N. J. Dpt. Education, at Hillwood Lakes, Ewing Twp., **$2,895,625.**

office bldg. for Dpt. Institutions & Agencies, adjoining the State House Annex on W. State St., **$2,252,500.**

office bldg. for State Dpt. Law & Public Safety, West Trenton, **$2,895,625.**

office bldg. for N. J. Dpt. Health near State School for Deaf, West Trenton, **$2,018,250.**

Proposed 17 story office building abandoned because of cost and parking problem. CD 12/23/52.

▲ **N. Y., Castleton Corners**—SHOPPING CENTER—Park Fairway Corp., c/o A. H. Salkowitz, archt., 37-60 82 St., Jackson Heights, shopping center, 4-acre tract at Manor Rd. and Victory Blvd. **$1,500,000.**

▲ **Pa., New Castle**—HIGH SCHOOL—Bd. Educ., New Castle, Senior High School addn. **$1,750,000.** CD 4/29/52.

▲ **Pa., Springfield**—SCHOOLS—Springfield School Dist., Springfield, elementary school, **$750,000;** Sabold Elementary School addn., **$750,000.**

▲ **Tex., Alvin**—SCHOOL—Alvin Independent School Dist., Alvin, bond election Apr. 2, physcial education bldg. and indoor swimming pool and school repairs, **$400,000;** new school, **$600,000.** CD 2/28.

Tex., Corpus Christi—HIGH SCHOOL—Corpus Christi Independent School Dist., 515 N. Carancahua St., plans by Brock & Anderson, 210 Jones Bldg., Junior High School on Kosar Tract. **$600,000.** CD 3/12/54.

Tex., Dickinson—HIGH SCHOOL—Dickinson Independent School Dist., Dickinson, plans by Wyatt C. Hedrick, archt.-engr., 5201 Fannin St., Houston, Junior High School. **$550,000.**

▲ **Tex., LaMarque**—SCHOOLS—LaMarque Independent School Dist., LaMarque, plans by Wyatt C. Hedrick, 5201 Fannin St., Houston, Junior High School, **$642,500;** elementary school, Eastside, **$400,000;** Negro Elementary School, **$360,000;** elementary school, Westside, **$350,000.** CD 3/11.

▲ **Tex., Port Arthur**—SCHOOLS—Port Arthur Independent School Dist., Port Arthur, bond election May 15, 1954 now legally declared "not carried" by a few votes. There will be another election soon. High school, **$3,218,861;** No. 1 Elementary School for Whites, **$425,000;** No. 2 Elementary School for Whites, **$440,000** No. 3 Elementary School for Negroes, **$965,000;** conversion technical Junior High School into Junior High School, **$300,000;** classroom addns., Upper Grade Schools, **$319,500;** classroom addns., Lower Grade Schools, **$329,361.** CD 5/24.

▲ **Tex., San Antonio**—SCHOOLS—Northeast Independent School Dist., c/o C. L. Camp, Lockhill-Selma Rd., bond election Apr. 16, Senior High School **$1,000,000;** Junior High School, **$910,000;** Elementary School No. 1, **$375,000;** Elementary School No. 2, **$365,000;** Elementary School No. 3, **$350,000;** Elementary School No. 4, **$370,000;** Elementary School No. 5, **$380,000.**

Va., Petersburg—HOSPITAL—Virginia State Hospital Bd., 309 N. 12 St., Richmond, plans by J. S. Rawlings, 3341 W. Cary St., Richmond, and Robert J. Leary, 110 N. 7th St., Richmond, hospital at Central State Hospital. **$725,000.**

Va., Richmond—ARMORY—City, Horace Edwards, mgr., City Hall, armory. **$800,000.**

▲ **Va., Staunton**—HOSPITAL—State Dpt. Institutions, State Capitol, Richmond, complete 2,500-bed hospital, will incl. number of separate bldgs., Western State Hospital. **$22,000,000.**

▲ **Va., Williamsburg** — HALL — College of William & Mary, Alvin D. Chandler, pres., Williamsburg, plans by J. Binford Walford & O. Pendleton Wright, 103 E. Cary St., Richmond, Phi Beta Kappa Hall, Jamestown Rd. **$1,000,000.**

▲ **Wash., Tacoma**—SCHOOL—School Dist. 10, 601 S. 10 St., **$2,000,000** bond election May 10, West End High School. Lee, Pearson & Richards, Tacoma, archts. CD 9/17/53.

Ont., Toronto—MUNICIPAL—Etobicoke Twp., 4946 Dundas St. W., Islington, plans by Shore & Moffat, 79 Queen St. E., municipal bldg., Hy. 27 and Burnhamtorpe Rd., 20-acre site, **$750,000.**

Sask., Regina—HOUSING—Government of Saskatchewan, Dpt. P. Wks., Parliament Bldgs., plans by Stock, Ramsey & Assocs., 1745 Scarth St., Regina, community housing, Pioneer Village, **$500,000.**

▲ **Sask., Saskatoon**—HOUSING—City, City Hall, 100 low rental unit housing development for elderly people plus a hotel, **$1,090,000.**

COMMERCIAL BUILDINGS

Calif., Beverly Hills—OFFICE—Wallace Moir, c/o Paul Robinson Hunter, archt., 5758 Wilshire Blvd., Los Angeles, 4 story, concrete office, **$800,000.**

▲ **Calif., Del Mar**—HOTEL, etc.—Stafford & Cook Enterprises, 1424 Sunset Cliffs Blvd., San Diego, plans by Lee Stafford, 1424 Sunset Cliffs, San Diego, hotel, restaurant and cocktail lounge, **$1,000,000.**

▲ **Calif., Los Angeles**—OFFICE—Los Angeles Furniture Mart, c/o Heitschmidt & Thompson, archts., 2010 Wilshire Blvd., 13 story, rein.-con. office, Broadway and Washington Blvd, **$7,000,000.**

▲ **Calif., San Diego**—HOMES—Ballenbecher & Kelton, Route 1, Box 76, Unit 5, Allied Gardens, Inc. 550 homes, residential subdivision, **$1,000,000.** United Control Inc., 2223 El Cajon Blvd., consult. engr.

▲ **Colo., Denver** — STORE RENOVATING, REMODELING —Denver Merchandise Mart, Inc., c/o L. C. Fulen-

(Continued on page 102)

THE DOTS MARK A FEW OF THE STRUCTURES ON RAYMOND FOUNDATIONS. *Photo by Fairchild Aerial Surveys*

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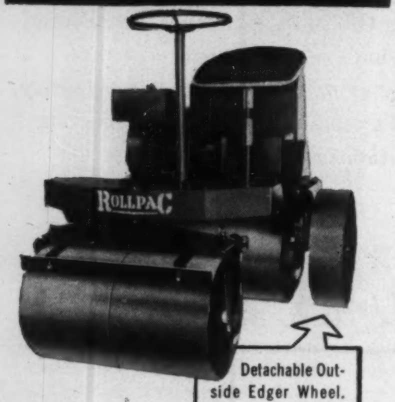

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(Continued from page 100)

wider, Inc., Equitable Bldg., plans by Ralph Peterson, engr., archt., 1707 Gilpin St., renovating, remodeling present Daniel & Fisher Store into a wholesale merchandise mart when D & F Store moves into the new courthouse square bldg. in 1957, **$2,000,000.**

▲ **Ga., Atlanta**—OFFICE—Fulton County Federal Savings & Loan Assoc., 26 Pryor St. N.E., plans by Abreu & Robeson, Inc., 141 Walton St. N.W., office bldg. **$3,000,000.** Robert G. Lose, Chandler Bldg., engr. CD 6/2.

▲ **Ga., Atlanta**—HOUSING—Ward Builders, Inc., 916 Green St., Augusta, 361 home new subdivision known as Pennington Park, **$4,000,000.**

▲ **Ill., Chicago**—STORE, etc.—Goldblatt Brothers, Inc., 325 S. State St., store and parking area at 78 St. and Cottage Grove Ave. **$2,000,000.**

Minn., South St. Paul—CHURCH, etc.—Luther Memorial Church, South St. Paul, plans by Bergstedt & Hirsch, 695 Endicott-on-Robert St., St. Paul, church with offices, school facilities, 2 residences, **$600,000.**

Mo., St. Louis County—COUNTRY CLUB—Bellerive Country Club, 8001 Natural Bridge Rd., Normandy, Zone 21, development of country club proj., incl. club house 18-hole golf course, swimming pool, tennis courts, lakes for fishing, skeet shooting area, parking facilities on 360 acre site at Mason and Ladue Rds. **$500,000.**

Mo., St. Louis County—STORE—Central Hardware Co., 4200 Union Ave., St. Louis, Zone 15, plans by Russell, Mullgardt, Schwarz, Van Hoefen, 1620 Chemical Bldg., 721 Olive St., St. Louis, Zone 1, store and commercial development with parking facilities, Lindbergh Blvd. and Big Bend Rd. **$500,000.** CD 3/15.

Nev., Las Vegas—OFFICE—Three-O-One Corp., Las Vegas, plans by Zick & Sharp, 1806 S. Main St., 5 story, office air-conditioned, Third and Fremont Sts., **$525,000.** CD 3/4.

▲ **N. J., Princeton**—LIBRARY—Princeton Theological Seminary, Mercer St., plans by George T. Licht, and O'Connor & Kilham, 101 Park Ave., New York, N. Y., Robert Speer Memorial Library, **$1,500,000.** Weishopf & Pickworth, 2 W. 45 St., New York, N. Y., consult. engrs. CD 10/15.

N. Y., **Brooklyn**—APARTMENT—Gerry Constr. Corp., 1501 East New York Zone, New York, Zone 12, plans by Milton F. Kirchman, 230 W. 13 St., New York, Zone 11, 6 story aprtment, 2909-11 Ocean Ave. **$650,000.**

▲ **N. Y., Garden City**—STORE—Lord & Taylor, 5 Ave. and 38 St., New York, Zone 1, plans by Fordyce & Hamby Assocs., 29 W. 57 St., New York 19, N. Y. 2 story department store, Franklin Ave. between 12 and 13 Sts. **$2,000,000.**

▲ N. Y., **Kew Gardens**—APARTMENT—Lefrak Organization, 97-27 64 Rd., Forest Hills, American Village Apartment Development, 3 seven story bldgs., Austin St., between 84 Rd. and Ward St. **$7,000,000.**

N. Y., **New York**—APARTMENT—Fillmore Management Corp., 270 Park Ave., Zone 17, plans by Hippolyte Kamenka, 101 Park Ave., Zone 17, 6 story apartment, 12-16 Beekman Pl. and 422-24 E. 50 St. **$970,000.** Peter W. Bruder, 200 E. 37 St., Zone 16, engr.

O., Berea—LIBRARY—Baldwin Wallace College, 66 Seminary St., 1 or 2 story library. $900,000. CD **5/4/50.**

O., Shelby—HOSPITAL—Shelby Memorial Hospital, Bd. Trustees, Shelby, 65-bed hospital, on site of present bldg. **$700,000.**

Pa., Phila.—CHURCH—St. Bartholomews R.C. Church, 5600 Jackson St., plans by Gleeson & Mulrooney, Fox Bldg., church. **$500,000.**

▲ **S. C., Charleston**—DWELLINGS—Berkeley Homes, E. P. Holcombe, Jr., (agt). 39 Broad St., plans by Milton Abrams, 10 Broad St., 250 one-family dwellings, near N. Charleston. **$3,000,000.**

▲ **Tex., Bellaire**—COMMUNITY CENTER—Frank W. Sharp, 2202 Rosslyn St., Houston, plans by Mackie & Kamrath, 2713 Ferndale St., Houston, 150-store masonry Community Center (main bldg. of 5 stories, 2 secondary bldgs. of 4 stories; 3 bldgs. of 3 stories and several 1 story structures) 22-acre tract, "Sharpstown", **$25,000,000;** underground parking garage for community center employees only, **$250,000.**

▲ Tex., **Corpus Christi**—OFFICE—Sam E. Wilson, Jr., Wilson Tower, plans by Wm. D. Reed, Merc. Sec. Bldg., Dallas, 25 story office. **$5,500,000.** CD 2/3.

Tex., Houston—OFFICE—K. E. Womack, Jr., Cotton Exchange Bldg., plans by Cameron Fairchild & Assocs., 2626 Westheimer St., 7 story, masonry office bldg. to be called the "Barristers", Fannin and Preston Sts. **$500,000.**

Tex., **Sherman**—HOSPITAL—Wilson N. Jones Hospital, Sherman, plans by James A. Hamilton Assocs., archts., and hospital consult., 428 S. E. Walnut St., Minneapolis, Minn., existing hospital renovation and expansion, incl. 26 addnl. rooms. **$700,000.**

▲ **Va., Annandale**—HOSPITAL—Fairfax County Health Council, c/o Joseph H. Freehill, chn., 1701 K St. N. W., Wash., D. C., 200-bed hospital. **$4,000,000.**

▲ **Va., Petersburg**—SHOPPING CENTER—Grandale Realty Corp., 342 Madison Ave., New York, N. Y., plans by George Nemeny, 100 W. 42 St., New York, N. Y., shopping center, Washington, Sycamore and Union Sts. **$2,000,000.** CD 7/22.

Wash., **Factoria**—HOUSES—Eric Pearson, Bellevue, plans by R. H. Peck, 332 2 Ave., W. Seattle, 65 houses Mockingbird Hill **$650,000.**

▲ **Wash., Spokane**—DEPARTMENT STORE—Crescent Department Store, Riverside and Main Sts., 4 story, steel department store addn. **$1,000,000.**

Wis., **Wausau**—SCHOOL—Newman Catholic Parochial High School, Wausau, plans by R. Hackner, 412 Rivoli

Bldg., La Crosse, Newman High School. $500,000. CD 8/25.

▲ **Alta., Calgary**—DEPARTMENT STORE, etc.—T. Eaton Co. Ltd., 190 Yonge St., Toronto, Ont., department store expansion, 4 story addn. to store to provide 91,000 sq. ft., enlarged store to cover one block at 8th Ave. and 4th St., 7th Ave. and 3 St., **$3,000,000,** also 5 story car park bldg. **$500,000.** CD 2/28.

Ont., Ottawa—HOUSING—Mooretown Co. Ltd., c/o job near Merivale Rd., L. E. Wismer, pres., 28-unit for aged people, 78-dwellings housing program, on near Merivale Rd. south of here, **$670,000.**

Ont., Sarnia—OFFICE—Canadian Oil Companies Ltd., 204 Richmond St. W., Toronto, plans by Gordon S. Adamson & Assocs., 52 St. Clair Ave., E., Toronto, office and gate house at Sarnia Refinery **$750,000.**

▲ **Ont., Toronto**—HOUSING—Greenwin Constr. Co., Lawrence Ave. E., three housing projects, 150 homes in Don Mills development, 121 apartments and 114 garden court units in same area; 165 homes in Bathurst St.-Sheppard Ave. area; houses in Bathurst St.-Lawrence Ave. area, **$11,000,000.**

Ont., Toronto—APARTMENT—S. Saltzman, 130 Old Forest Hill Rd., plans by Crang & Baoke, 79 Huntley St., Toronto, 87-suite, 12 story, 55x110 ft., rein.-con., steel brick, block apartment, Avenue Rd. and Balmoral Ave., **$650,000.**

▲ **Ont., Toronto** — APARTMENT — Ben Seaton, 45 Wembly Rd., plans by E. I. Richmond, 455 Spadina Ave., 14 story apartment hotel, 80 units, 5 story garage, Carlton St. **$3,000,000,** W. V. Zinn & Assoc. Ltd., 102 Eglinton Ave. E., consult. engrs. CD 3/11.

INDUSTRIAL BUILDINGS

▲ **Ala., Gadsden**—PLANT EXPANSION—Republic Steel Corp., 1405 Republic Bldg., Cleveland 1, O. plant expansion, **$2,000,000.**

▲ **Conn., Bridgeport**—GENERATING STATION—United Illuminating Co., 80 Temple St. , New Haven, generating station, west side of harbor, **$2,000,000.** Jackson & Moreland, Park Sq. Bldg., Boston, Mass., consult. engrs.

▲ **Conn., Groton**—RESEARCH and DEVELOPMENT CENTER—General Dynamics Corp., c/o Electric Boat Div., Carleton Shugg, genl. mgr., Groton, Research and Development Center, **$1,000,000.**

Ill., Evanston—BOTTLING PLANT—Orange Crush Co., 314 W. Superior St., Chicago, bottling plant, Main St. and Hartrey Ave. **$600,000.** W. Fred Dolke, 189 W. Madison St., Chicago, consult. engr.

▲ **Mass., Dorchester**—PUBLISHING—Boston Globe, 244 Washington St., Boston, 2 story, 400,000 sq. ft. publishing bldg. Wm. J. Morrissey Blvd. **$8,000,000.** Ganteaume & McMullen, 99 Chauncey St., Boston, consult. engrs.

Tex., Fort Worth—WAREHOUSE, etc.—S & H Green Stamp Co., c/o Walter Beincoke, Jr., 114 Fifth Ave., New York, N. Y., plans by Wyatt C. Hedrick, 1200 T & P Passenger Bldg., warehouse-office. **$500,000.**

▲ **Tex., Tyler**—PLANT—National Homes Corp., 3409 Oaklawn St., Dallas, 1 story 250,000 sq. ft., masonry plant near here, **$1,000,000,** L. F. Peeler, 3409 Oaklawn St., Dallas, assoc. engr.

▲ **Utah, Salt Lake City**—PARKING TERRACE—McCullough Investment Co., Kearns Bldg., parking terrace, W. 2 Ave. S. between Main and W. Temple Sts. **$1,500,000.**

Ont., Cornwall — PLANT EXPANSION — Howard Smith Paper Mills Ltd., 407 McGill St., Montreal, Que., paper mill expansion, Hy. 2. **$500,000.** CD 3/10/52.

UNCLASSIFIED

Pennsylvania—RURAL DISTRIBUTION LINES—Northwestern Rural Electric Co-operative Assn., Cambridge Springs, 43 mi. rural distr. line, sys. imprvs., addnl. sub-station facilities, Crawford Co. **$575,000.** CD 8/23/48.

▲ **Texas, Oklahoma, Kansas**—GAS GATHERING LINES—Colorado Interstate Gas Co., Box 1087, Colorado Springs, Colo. exten. gas gathering lines and facilities in Panhandle of West Texas, Keyes Field, Okla. and Hugoton and Greenwood Fields, Kan. **$4,200,000.** CD 5/ 26/50.

▲ **Texas**—GAS LINE, etc.—Lone Star Gas Co., 301 S. Harwood St., Dallas, 205 mi. natural gas line from Snyder to Fritch, **$3,500,000;** 220-mi. gas pipe line from Petrolia to Fritch, **$3,750,000.**

▲ **Texas**—OIL LOOP, etc.—Magnolia Pipe Line Co., Magnolia Bldg., Dallas, 215 mi. crude oil loop along Midland-Corsicana existing line, **$4,500,000;** conversion crude oil line from Midland area to Hull and Beaumont areas into a liquefied gas products carrier. **$9,500,000.**

Texas—TELEPHONE LINES—Northeast Telephone Co., Bogota, stringing 164 mi. new rural pole telephone lines, rebuilding 39 mi. existing lines and sys. imprvs., Red River and Lamar Counties. **$500,000.**

▲ **Texas** — GAS GATHERING LINES — Wilcox Trend Gathering System, Inc., Mercantile Commerce Bldg., Dallas, addnl. gas gathering lines sys., Cuero-Goliad Areas, **$1,000,000;** compressor station, Goliad, **$200,000;** compressor station, Cuero, **$275,000.**

Virginia—RURAL DISTRIBUTION LINES—Southside Electric Co-operative, Crewe, 90 mi. rural distr. line and sys. imprvs., addnl. headquarter facilities, Nottoway Co. **$755,000.** CD 10/4/46.

▲ **Ontario**—RAILWAY LINE—Canadian National Rys., R. O. Stewart, ch. engr., Montreal 3, Que., relocation of C.N.R. line serving area between Cornwall Junction to Cardinal, 5,000 ft. north of present tracks. **$20,000,000.** (Correction—engineer's name). CD 2/16.

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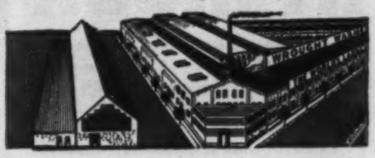

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

April 20 Maine

STREETS AND ROADS

April 12, 26 Massachusetts April 13 Maine

New Hampshire—BA 4/15—New England Power Co., 441 Stuart St., Boston, Mass., power house superstructure for hydro proj. at Littleton. $500,000. Ebasco Services, Inc., 2 Rector St., New York, N. Y., engr.

BIDS ASKED—BUILDINGS

Conn., Berlin — SCHOOLS — BA 4/14 — Town, Supt. Schools, Patterson Way, Berlin, 2 elementary schools, Norton Rd., Berlin and Percival Ave., Kensington. $750,000. Extended date. Hollis W. Kincaid, Market Sq., Newington, archt. CD 3/29.

Mass., North Reading—SCHOOL—BA 4/22—Town Junior-Senior High School Bldg. Comn., North Reading, Junior-Senior High School, Peabody St. $750,000. Plans deposit $100. Adden, Parker, Clinch & Crimp, 177 State St., Boston, Mass., archts. Hubbard, Tracy & Blakely, 177 State St., Boston, engrs. CD 2/11/54.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Gill Wyner Co., Inc., 12 Newland St., Malden, Mass., and **Grande & Son, Inc.**, 425a Broadway, Everett, Mass., LB **$3,665,857**, Contr. 3, North East Expressway, easterly connection to Revere Beach double barreled hy. and 3 overpasses, Chelsea and Revere. Bids Mar. 29. CD 3/1.

A. Piatelli & Ralph Civitarese Constr. Corp., 139 Providence St., Hyde Park, Mass., LB **$650,133**, est. $600,000. Contr. 22, Blackstone Valley Interceptor, Sect. D. Central Falls, Cumberland and Lincoln, PROVIDENCE, R. I. State R. I. & Providence Plantations, F. A. Adams, purch. agt., State House, Providence, R. I. Bids Mar. 28. CD 3/14.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Town of Barnstable**, 387 Main St., Hyannis, Mass., rejected bids Mar. 18, HIGH SCHOOL, HYANNIS, MASS. LB **$1,939,000**. CD 3/23, under LB.

O. D. Purington, Inc., 17 Westminister St., Providence, R. I., LB, **$619,000**. Junior and High School, off Mayflower Ave., MIDDLEBORO, MASS. Town. School Bldg. Comn., Middleboro, Mass. Bids Mar. 25. CD 3/9.

Lilly Constr. Co., 122 Hampshire St., Cambridge, Mass., LB, **$559,950**, SYNAGOGUE alterations, addns., 837 Humphrey St., Swampscott, Mass. Temple Israel, 837 Humphrey St., Swampscott, Mass. Bids Mar. 25. CD 3/16.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

April 22 Pennsylvania

STREETS AND ROADS

April 13 Delaware April 14 New Jersey

April 22, 29 Pennsylvania

† **N. Y., Rome**—A.F. FACILITIES—BA On Or About 4/27—U. S. Eng., 111 E. 16 St., New York, Zone 3, constr. A.F. Facilities, FY 1955, Navarho Site—Auxiliary No. 2, Griffiss Air Force Base, ENG-30-075-55-254. $750,000-$1,000,000. Plans deposit $25. CD 10/6.

BIDS ASKED—BUILDINGS

N. Y., St. Albans—HIGH SCHOOL—BA 4/14—St. Pascal Babylon Church, c/o Anthony J. DePace, archt., 151 W. 46 St., New York, Zone 19, 3 story high school and auditorium, 112 Ave. and 199 St. $900,000. CD 10/26.

▲ **Pa., Bethlehem**—HALL, etc.—BA 4/14—Lehigh University, c/o Andrew M. Litzenberger, Bethlehem, (selected list of bidders), Packer Hall addn., alterations, $1,570,000; dormitory bldg., $850,000. Jens Frederick Larson, Reynolda, N. C., archt. Watson & Hart, 914 Summit Ave., Greensboro, N. C., engrs.

▲ **Pa., Media**—HIGH SCHOOL—BA 4/14—Central Delaware County Joint School Auth., Media, Junior-Senior High School. $2,000,000. The Ballinger Co., 121 N. Broad St., Phila., archt. CD 1/4.

N. J., Haddonfield—HIGH SCHOOL—BA 5/5—At Office Milton Schwartz, 10 S. 18 St., Phila., Pa., Bishop Eustace High School, Marlton Pike, For Society of Catholic Apostulate, Merchantville, N. J. $500,000. Bloom & Dorfman, 1411 Walnut St., Phila. Pa., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Great Lakes Dredge & Dock Co.**, 17 Battery Pl., New York, N. Y., LB **$1,516,351**, est. $1,113,762, dredging to depth of 37 ft. below mean low water, incl. removal approx. 510,900 cu. yd. place measurement, all material, incl. ledge rock from New York and New Jersey Channels, Sect. 4, Area 2, Richmond Co. N. Y. and Union Co., N. J., CIVENG-30-075-55-47, NEW YORK and NEW JERSEY. 16 St., New York 3; N. Y. Bids Mar. 30. CD 3/21.

▲ **Walsh Constr. Co., B. Perini & Sons, Morrison-Knudsen Co., Peter Kiewit Co. and Utah Constr. Co.**, 122 E. 42 St., New York 17, N. Y., CA **$25,972,033**, constr. Long Sault Dam, near Massena, St. Lawrence Co., Spec. PA-5-11002, St. Lawrence Contr. No. 8, NEW YORK. The Power Authority of the State of New York, 270 Broadway, New York 7, N. Y. Bids Mar. 24. CD 3/28, under LB.

† **Arthur Venneri Co.**, 300 N. Avenue East, Westfield, N. J., LB **$979,860**, officers club and mess, BOQ's FYY 55, Plattsburgh Air Force Base, PLATTSBURGH, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids Mar. 29. CD 3/25.

MARYLAND—State, 108 E. Lexington St., Baltimore, Zone 2,

Allied Contractors, Inc., 204 E. Preston St., Baltimore 2, Md. CA **$578,541**. six span dual WF steel beam bridges to carry relocated River Rd. (Md. Rte. 201), over Magruder Branch of P.R.R. 284 ft. long 30 ft., 44 ft., 44 ft., 74 ft., 48 ft., 42 ft. and 54 ft. roadways, 18,000 lin. ft. cast in place concrete piles, 6,500 lin. ft., Contr. P-724-14-320 Prince George's Co. Bids Feb. 1, awarded Mar. 24.

▲ **Merritt-Chapman & Scott Corp.**, 260 Madison Ave., New York, N. Y., CA, **$29,894,081**. Patapsco Tunnel Proj. for state roads, MARYLAND. State Rds. Comn., 108 E. Lexington St., Baltimore 3, Md. Bids Mar. 10. CD 3/14, under LB.

▲ **Henkels & McCoy**, 6100 N. 20 St., Phila., Pa. LB **$937,507**. sewage treatment plant and primary sys.,

J. Roland Deshields, Salisbury, Md. LB **$257,626**. trickling filters and final clarifiers, SALISBURY, MD. City, City Hall, Salisbury, Md. Bids Mar. 24. CD 2/25.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Lasker-Goldman Corp.**, 50 E. 42 St., New York 17, N. Y. LB **$1,436,000**. general constr. EMPLOYEES HOME, Bldg. No. 109, Manhattan State Hospital, Wards Island, NEW YORK, N. Y. Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Mar. 24. CD 2/10.

Riviera Building Corp., c/o S. J. Kessler & Sons, archt., 551 Fifth Ave., New York 17, N. Y. Owner Builds. **$650,000**. 10 story APARTMENT, 2601 Henry Hudson Parkway West, NEW YORK, N. Y.

▲ **Syosset Birches Homes**, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. **$2,000,000**. 96 HOUSES, 20-acre tract, Jericho Turnpike, east of South Oyster Bay Rd., SYOSSET, N. Y.

▲ **Ocean County Development Corp.**, Lakewood, N. J. Separate Contracts, **$1,500,000**, RESIDENTIAL DEVELOPMENT, Tanglewood Lane, LAKEWOOD, N. J. C. J. Kordys, 116 Passaic St., Passaic, N. J. archt.

Wakefield Residences, 112 Madison Ave., Lakewood, N. J. Separate Contracts, **$800,000**. RESIDENTIAL DEVELOPMENT, LAKEWOOD, N. J. Harry Maslow, 275 Morris Ave., Eliazbeth, N. J., archt.

Mayfair Gardens, Inc., c/o Well-Built Homes, Williamstown, N. J., Separate Contracts, **$800,000**. RESIDENTIAL DEVELOPMENT, Washington Twp., WILLIAMSTOWN, N. J. Carl Thomas Prior, 111 Landis Ave., Vineland, N. J., archt.

Boyd H. Kline, Berwick Rd., Bloomsburg, Pa., CA **$903,175**. general constr. Secondary SCHOOL for the Bald Eagle-Nittany Area Joint School Board, MILL HALL, PA. State Public School Bldg. Auth., 101 S. 25 St., Harrisburg, Pa. Bids Feb. 24, awarded Mar. 24. CD 3/2, under LB.

▲ **John S. McQuade, Jr.**, 1318 Parrish St., Phila., Pa. CA **$2,000,000**. three 1 story, 230x113 ft., 206x146 ft., and 150x121 ft. brick, masonry, steel WAREHOUSES-OFFICES, railroads, PHILA., PA. Baehr Bros., 1801 Walnut St., McKeesport, Pa. Bids Mar. 17. CD 3/9.

▲ **George Parkman, Jr.**, (contractor and engr.) Investment Bldg., Pittsburgh, Pa. CA **$3,500,000**. design and construct 8 story bsmnt., brick, block, steel APARTMENT, four wings, PITTSBURGH, PA. 401 Shady Ave. Corp., Investment Bldg., Pittsburgh, Pa. Shear, Spagunolo & Taylor, 4916 Forbes St., Pittsburgh, Pa., archts. CD 2/24.

Cleveland Yerger & Sons, Inc., 1424 York Rd., Abington, Pa. Separate Contracts. **$500,000**. RESIDENTIAL DEVELOPMENT, Carmet Rd., etc., RYDAL, PA.

Pinewood Constr. Co., 1800 N. Charles St., Baltimore 1, Md. CA **$663,000**. seventy-eight 2 story, 18x32x28 ft., brick HOMES, 6200 Pilgrim Rd., 2200 block Cloville Ave., 2200 block Louise Ave., BALTIMORE, MD. Grimden Realty Co., 1800 N. Charles St., Baltimore 1, Md. Benjamin Brotman, c/o owner, archt.

▲ **Philip Vizzini & Son**, 504 Stamford Rd., Baltimore 29, Md. LB **$2,584,792**. West Southwest Senior High SCHOOL, Athol and Edmonson Aves., BALTIMORE, MD. City, Bureau Bldg. Constr., 410 Municipal Bldg., Baltimore 2, Md. Bids Mar. 23. CD 3/8.

Consolidated Eng. Co., Inc., 20 E. Franklin St., Baltimore, Md., CA, **$700,000**, LABORATORY WING, LAUREL, MD. Johns Hopkins Applied Physics Laboratory, 8621 Georgia Ave., Silver Spring, Md. Bids Mar. 23, awarded Mar. 25. CD 3/18.

L. Richman, 3455 16 St. N.W., Wash., D. C. Owner Builds. **$616,000**. 77-unit APARTMENT, 4100 W. St. N.W., WASH., D. C. Edwin Weihe, 1621 K St. N.W., Wash., D. C., archt.

SOUTH

SOON LETS CONTRACT—BUILDINGS

▲ **W. Va., Ravenswood**—PLANT—Kaiser Aluminum & Chemical Corp., Ravenswood, soon lets contract main plant bldg. at new aluminum plant. CD 8/16/54, under W. Va., Huntington.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **H. L. Coble Constr. Co.,** 1705 Battle Ground Ave., Greensboro, N. C., CA **$1,571,213.** air force dormitories and dining hall for airmen Myrtle Beach Air Force Base, No. 38-081-55-36, MYRTLE BEACH, S. C. U. S. Eng., Custom House, Charleston, S. C. Bids Mar. 3. CD 2/10.

† **Brinson Constr. Co.,** 51 St. and East Broadway Ave., Tampa, Fla., LB, **$597,000,** dredging 750,000 cu. yd. rock from Florida Bay, Flamingo, Everglades National Park, FLORIDA. Bureau P. Rds., Dpt. Commerce, Park Supt., Homestead, Fla. Bids Mar. 16. CD 2/25.

† **F. & C. Engineering Co.,** Box 2426, Houston, Tex. LB **$538,443.** Bayou Cortableau drainage structures, West Atchafalaya basin protection, St. Landry Parish, Inv. 55-164, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La. Bids Mar. 17. CD 2/24.

M. & L. Constr. Co., Box 96, Kaplan, La. CA **$621,147.** sewerage collection sys., alterations, addns. EUNICE, LA. City, Eunice, La. Bids Mar. 1, awarded Mar. 17. CD 3/9, under LB.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,

Tenn.—**Anderson-Gregory Constr. Co.,** Cotton States Bldg., Nashville, Tenn., LB **$716,318,** crushed stone and bit. materials surf., constr. two bridges on 4.062 mi. sect. State Rte. 153. Proj. No. F-074-1-(2), Hamilton Co.; LB **$98,444,** crushed stone surf., constr. two bridges 3.343 mi. sect. Secondary Rte. 4315. Proj. No. S-4315-(1), Polk Co.;

Tenn.—**Hugh Dixon Paving Co.,** Carthage, Tenn., LB **$78,305,** bit. materials surf. 10.185 mi. sect. Secondary Rte. 4244, Proj. No. S-4244-(9), Putnam Co.;

Tenn.—**Garrett & Farris Constr. Co.,** Kingston Pike, Tenn., LB **$260,400,** crushed stone and bit. materials paving, constr. curb, gutters, sidewalks and two bridges 1.063 mi. sect. State Rte. 73, Proj. No. F-066-1-(3), Sevier Co.;

Tenn.—**Harrison Constr. Co.,** Maryville, Tenn., LB **$425,743,** bit. materials paving sect. 14.278 mi. State Rte. 73, Proj. No. F-053-1-(6), Blount Co.;

Tenn.—**Interstate Constr. Co.,** Third Natl. Bldg., Nashville, Tenn., LB **$330,037,** bit. materials wid'n., resurf. 12.8 mi. sect. State Hy. 15, Proj. No. SP-1127-A, Giles Co.;

Tenn.—**Lehman-Roberts Co.,** 1098 Wilson St., Memphis, Tenn., LB **$153,151,** bit. materials resurf. 27.4 mi. sect. State Hy. 57, Proj. No. SP-1125-A, Hardeman and McNairy Counties;

Tenn.—**Lenoir Asphalt Co.,** Lenoir City, Tenn., LB **$96,364,** crushed stone or gravel surf. 6.381 mi. sect. Secondary Rte. 2429, Proj. No. S-2429-(5), Loudon Co.;

Tenn.—**Roadbuilders, Inc.,** 718 Murfreesboro Rd., Nashville, Tenn., LB **$124,518,** bit. materials surf. 5.596 mi. State Rte. 10, Proj. No. F-010-3-(3), Wilson Co.;

Tenn.—**Southern States Paving Co.,** 900 44th Ave. N., Nashville, Tenn., LB **$106,259,** bit. materials resurf. 13.9 mi. sect. State Hy. 76, Proj. No. SP-974-B, Stewart Co.; LB **$74,769,** bit. materials resurf. 18.9 mi. State Hy. 13, Proj. No. SP-1128-A, Houston and Montgomery Counties;

Tenn.—**Warren Brothers,** 1900 Hayes St., Nashville, Tenn. LB **$249,418,** bit. materials wid'n. and resurf. 10.6 mi. State Hy. 54, Proj. No. SP-1124-A, Henry Co.; LB **$354,346,** bit. materials wid'n. and resurf. 9.3 mi. State Hy. 5, Proj. No. SP-1126-A, Madison Co. Bids Mar. 25. CD 3/8.

BUILDINGS

LOW BIDS AND CONTRACTS

Mottley Constr. Co., Farmville, Va., CA **$538,400.** Blackwater Consolidated SCHOOL, Rte. 460 and 154, New Bohemia, HOPEWELL, VA. Prince George County School Bd., C. W. Smith, supt., Hopewell, Va. Bids Feb. 28. CD 3/7, under LB.

▲ **M. W. Kellogg Co.,** 225 Broadway, New York, N. Y., CA, two major REFINING PROCESS UNITS, mechanical shop, laboratory and process bldg., product-treating bldg., electrical and pipe line facilities;

Chicago Bridge & Iron Co., 2492 McCormick Bldg. Chicago 4, Ill., CA, 57 tanks;

Tidewater Constr. Co., 538 Front St., Norfolk, Va., CA, pier, HORNSBYVILLE, VA. Total cost **$25,000,000.** American Oil Co., 122 E. 42 St., New York 17, N. Y. CD 7/16.

▲ **Virginia Eng. Co., Inc.,** 29 St. and James River, Newport News, Va., LB **$2,641,000.** 15 story, bsmnt., sub-bsmnt., concrete frame STATE OFFICE, RICHMOND, VA. Commonwealth of Va., State Finance Bldg., Richmond, Va. Bids Mar. 28. CD 2/24.

† **T. A. Loving & Co.,** Bank of Wayne Bldg., Goldsboro, N. C., CA **$542,238,** FACILITY at Smith Lake Field, ENG-31-075-55-42, FORT BRAGG, N. C. U. S. Eng., 308 Custom House, Wilmington, N. C. Bids Mar. 8. CD 2/24.

Lewis Briggs, Box 570, Macon, Ga., CA **$688,906,** Consolidated Negro SCHOOL for Barnesville, CLASSROOM BLDG. for Barnesville Grammar School; consolidated SCHOOL for Milner, GEORGIA State School Bldg. Auth., 41 Exchange Pl. S.E., Atlanta, Ga. Bids Feb. 24, awarded Mar. 24. CD 3/2, under LB.

Blue Ribbon Constr. Co., 3333 Palm Ave., Hialeah, Fla. Owner Builds. **$569,402,** 57 one story RESIDENCES,

(Continued on page 107)

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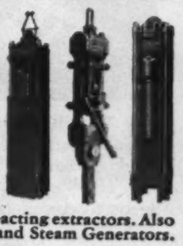

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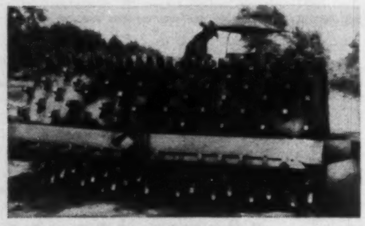

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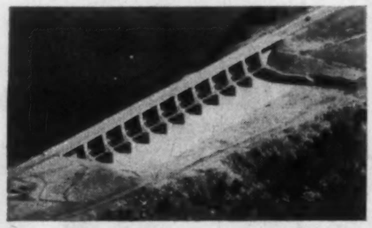

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CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

(Continued from page 105)

MIAMI, FLA. Palmer & Krisel AIA Architects & Engineers, 827 Moragan Dr., West Los Angeles, Calif., archts.

Atlas Constr. Co., Box 1006, Texarkana, Tex. LB **$598,923.** 2 story, steel, masonry HOSPITAL, OPELOUSAS, LA. Hospital Service Dist. No. 2, St. Landry Parish, Opelousas, La. Bids Mar. 24. CD 2/24.

Forbes & Taylor, 361 Boiling Springs Ave., Lexington, Ky. LB **$519,740.** AUDITORIUM-GYMNASIUM, FRANKFORT, KY. City, Bd. Educ., Frankfort, Ky. Bids Mar. 24. CD 2/28.

▲ **Edward Ross & Son**, 14980 Linwood St., Detroit, Mich., Owner Builds, **$2,000,000**, 192 single family brick HOUSES, LOUISVILLE, KY.

Sullivan & Cozzart, 822 W. Kentucky St., Louisville, Ky., CA, **$550,000.** MODEL SCHOOL and COLLEGE addn., LOUISVILLE, KY. Ursuline College, Lexington Rd., Louisville, Ky. Bids Mar. 24, awarded Mar. 30. CD 3/30, under LB.

Clark Constr. Co., 1919 Parrish Ave., Owensboro, Ky., CA, **$531,761**, West Broadway, Hayes Ave. and Pride Ave. Elementary SCHOOLS, MADISONVILLE, KY. Hopkins County Bd. Educ., Madisonville, Ky. Bids Mar. 25, awarded Mar. 28. Roberts & Johnson, 115 E. 4 St., Owensboro, Ky., archts. Frank Cain, Jr., 36 W. Broadway, Madisonville, Ky., assoc. archt.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

O., Parma—BA 4/14—City, 6611 Ridge Rd., masonry and steel incinerator with access ramps and garage for trucks, utilizing both direct charging and crane and storage bin operation. $630,000. George S. Voinovich, 1922 E. 107 St., Cleveland, archt. CD 10/27.

▲ **Ill., Chicago** — BA 4/18 — City, City Hall, West Wrightwood Ave. auxiliary storm sewers, Kedzie Ave. to Pulaski St. and laterals. $2,500,000. CD 3/4.

BIDS ASKED—BUILDINGS

Mich., Royal Oak — CHURCH — BA 4/15 — Harold H. Fisher & Assocs., archts., 1605 Industrial Bank Bldg., Detroit, church for First Congregational Parish, 130 W. 3rd St., Royal Oak. $500,000. CD 3/25.

▲ **Ill., Chicago**—HOUSING—BA 4/19—Chicago Housing Auth., 608 S. Dearborn St., Zone 5, 150-unit apartment, E. 40 and South Park Blvd. $1,500,000. Shaw, Metz & Dolio, 208 S. La Salle St., Zone 4, archts. CD 8/9/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Thomas Noland & Hughes**, 4017 S. Brook St., Louisville, Ky., LB **$2,125,772.** sewerage system Div. 1, sanitary sewers, pumping station, storm sewers, INDIANAPOLIS, IND. Ben Davis Conservancy Dist., L. E. Caldwell, pres., 4808 W. Washington St., Indianapolis, Ind. Bids Mar. 7. CD 2/7.

Allied Asphalt Paving Co., 13912 Halsted St., Riverdale, Ill., CA **$812,433**, 5 paving contracts, incl. curbing, grading, BROADVIEW, ILL. Village, Village Hall, Broadview, Ill. Bids Mar. 14, awarded Mar. 23. CD 3/23, under LB.

▲ **Healy Brothers & Co.**, P. O. Box 11, McCook, Ill., CA **$1,368,750**, Howard Intercepting Sewer Project, Skokie, CHICAGO, ILL. Sanitary Dist. of Chicago, 910 S. Michigan Ave., Chicago 5, Ill. Bids Feb. 24, awarded Mar. 24. CD 3/4, under LB.

S. N. Nielsen Co., Inc., 3059 W. Augusta Blvd., Chicago, Ill., CA, **$589,571**, sewage treatment plant, DOWNERS GROVE, ILL. Downers Grove Sanitary Dist., 5118 Main St., Downers Grove, Ill. Bids Feb. 18, awarded Feb. 23. CD 3/4, under LB.

WISCONSIN—State Hy. Comn., State Hy. Office Bldg., Madison,

Brennan Brothers, Lansing, Ia., CA, **$562,513.** structure Contract 1, Lansing-DeSoto (Mississippi River Slough Bridges) road, S.T. Hy. 9, Proj. S-0880 (1), Crawford Co. Bids Mar. 22. CD 3/25, under LB.

▲ **WISCONSIN**—State Hy. Comn., State Office Bldg., Madison,

Wis.—**Mathy Constr. Co.**, 508 Hoeschler Bldg., La Crosse, Wis., LB, **$105,915** Contract 1, single aggreg. bit. surf. 5.598 mi. S.T. Hy. 23, Proj. T 012-2 (1) Sauk Co.; LB **$189,255** Contract 1, bb. conc. 11.28 mi. U. S. Hy. 141, Proj. T 020-3 (13) and T 020-3 (14), Manitowoc and Brown Counties; LB **$88,278**, Contract 2, single aggreg, bit. 6.83 mi. S.T. Hys. 32 and 29, Proj. F 020-3 (9) (Detour) Brown Co.; LB **$168,817**, Contract 1 and 3, single aggreg, bit. surf. 10.466 mi. S. T. Hy. 35 and C.T. Hy. 'K'' Proj. F 057-1 (8), T 057-1 (4), T 057-1 (5), S 0612 (1) and T0125 (2), Vernon and La Crosse Counties;

Wis.—**H. Turner & Sons**, Boscobel, Wis., LB **$748,631** Contract 1, grading, ballast, base course 10.532 mi. S.T. Hy. 11, Proj. F 030-1 (24) and F 030-2 (5), Lafayette and Green Counties;

Wis.—**James Cape & Sons Co.**, 701 Water St., Racine, Wis., LB, **$211,587**, Contract 1, c. conc. 0.542 mi. S.T. Hys. 50 and 43, Proj. T 5002 (1) and T 5006 (1), Kenosha Co.;

Wis.—**Arthur Overgaard Co.**, Elroy, Wis., LB, **$382,625.** Contract 1, c. conc. 2.729 U. S. Hy. 16, Proj. T 018-1 (1) Monroe Co.;

Wis.—**Reliance Constr. Co.**, 1011 S. 8 St., Sheboygan, Wis., LB, **$296,832** Contracts 1 and 2, b. conc. 14.412 mi. S.T. Hys. 175 and 28 and 49, Proj. T 0979 (4) and T 0538 (4) Dodge Co.;

Wis.—**Rasmussen Constr. Co.**, Oshkosh, Wis., LB, **$181,098** Contract 1, base and b. conc. 5.556 mi. S.T. Hy. Proj. T 0511 (1), Fond du Lac Co.;

Wis.—**Payne & Dolan of Wisconsin, Inc.**, 735 N. Water St. Milwaukee, Wis., LB **$149,196**, Contract 1, b. conc. 6.98 mi. S. T. Hys. 145, 144 and 60, Proj. AFE 67-531, AFE 66-532, T 0135 (3) and T 0148 (2), Walkesha and Washington Counties;

Wis.—**Otto Wiesner, Inc. & Otto Wiesner**, Superior, Wis., LB, **$84,276**, Contract 1, single aggreg. bit. 91215 mi. S.T. Hy. 48, Proj. T 0162 (2), Barron Co. Bids Mar. 29. CD 3/11.

▲† **H. Turner & Sons**, Boscobel, Wis., LB, **$1,285,722** East-West Runway imprvs., Camp Williams Air Field, ENG-47-013-55-13, CAMP DOUGLAS, WIS. U. S. Eng., 428 Federal Bldg., Milwaukee 1, Wis. Bids Mar. 29. CD 3/22.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Townsend & Bottum, Inc.**, 2245 South State St., Ann Arbor, Mich., CA Est. **$9,000,000.** Unit No. 5, Picway GENERATING PLANT, CIRCLEVILLE, O. Columbus & Southern Ohio Electric Co., 215 N. Front St., Columbus O. CD 4/5/54.

Knowlton Constr. Co., 106 N. Main St., Bellefontaine, O., CA **$800,000**, general constr. 3 SCHOOLS in Lincolnshire Area; Monroe Acres and off Rowland Rd. (Sect. 9). TOLEDO, O. Bd. Educ., Washington Twp., 5700 Whitmer St., Toledo, O. Bids Mar. 17, awarded Mar. 18.

▲† **Repp & Mundt**, Box 432, Columbus, Ind., CA construct and operate solid rocket propellant pilot PLANT near here for the Wright Air Development Center, Air Research & Development Command, SEYMOUR, IND. Standard Oil Co. of Indiana, 910 S. Michigan Ave., Chicago, Ill. Bernard L. Crosby, 7241 Forest Ave., Hammond, Ind., archt.

▲ **Arnold Lies & Co.**, 1515 New York Ave., Aurora, Ill., LB, **$3,477,663**, East High SCHOOL, AURORA, ILL. School District 121, 56 Jackson St., Aurora, Ill. Bids Mar. 1. CD 1/25.

M. J. Boyle Co., 2480 Elston Ave., Chicago, Ill., LB, **$614,850**, PARKING GARAGE, 1124 Lawrence Ave., CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids Mar. 23. CD 3/15.

▲ **Lewis Brothers Constr. Co.**, 228 N. La Salle St., Chicago 1, Ill. Own Forces, **$1,200,000.** 60 HOMES, area of 87 and Jeffrey Sts., CHICAGO, ILL.

▲ **Paschen Bros. Constr. Co.**, 2739 Elston St., Chicago, Ill., LB, **$1,266,923** OFFICE, Rush and Erie Sts., CHICAGO, ILL. Sanitary District of Chicago, 91C S. Michigan Ave., Chicago 5, Ill. Bids Mar. 18. CD 3/9.

† **Pathman Constr. Co.**, 100 N. La Salle St., Chicago 2, Ill., CA **$507,765**, POST OFFICE work for Congress Highway, CHICAGO, ILL. General Services Admin., P. Bldg., Serv., U. S. Court House, 210 S. Clark St., Chicago, Ill. Bids Feb. 8, awarded Mar. 22. CD 2/16, under LB.

La Salle Constr. Co., 327 S. La Salle St., Chicago, Ill., CA **$500,000**, HOSPITAL, GENEVA, ILL. Community Hospital, 416 2 Ave., Geneva, Ill. Bids Feb. 18, awarded Mar. 24. CD 3/9, under LB.

Hope Constr. Co., 3520 N. Knox Ave., Chicago, Ill., CA **$700,000**, SHOPPING CENTER, FASHION only, GLENCOE, ILL. Landau & Perlman, 110 S. Dearborn St., Chicago 3, Ill. Bids Oct. 26, awarded Mar. 21. CD 10/6/54.

▲ **A. L. Jackson Co.**, 300 W. Washington St., Chicago 6, Ill., CA **$1,500,000**, 200,000 sq. ft. WAREHOUSE, North Ave. and 1 St., near here. MELROSE PARK, ILL. Ratheon Corp., 445 N. Lake Shore Dr., Chicago 11, Ill. A. Epstein & Sons Co., 2011 Pershing Rd., Chicago 9, Ill., archts.

▲ **John Griffiths & Son**, 228 N. La Salle St., Chicago 1, Ill., LB **$4,886,693.** New Trier HIGH SCHOOL, WINNETKA, ILL. School District No. 203, 385 Winnetka Ave., Winnetka, Ill. Bids Dec. 20. CD 12/17.

Gosnick Constr. Co., Benton Harbor, Mich., CA **$631,462**, general constr. HIGH SCHOOL, BENTON HARBOR, MICH. City Bd. Educ., Benton Harbor, Mich. Bids Mar. 10. CD 3/24, under LB.

▲ **Castell Realty**, 1601 E. 11-Mile Rd., Royal Oak, Mich. Owner Builds. **$1,500,000.** 127 brick ranch HOUSES, Middlebelt Rd. Sect., NANKIN, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

April 13 Kansas April 19 Texas

STREETS AND ROADS

April 14 Kansas, Nebraska April 19, 20 Texas

BIDS ASKED—BUILDINGS

Colo., Denver—AUDITORIUM—BA 4/15—City and Denver Co., City and County Bldg., Denver, remodeling present city auditorium. $833,550. Phillips, Carter & Osborn, Insurance Bldg., archts. G. Meredith Musick, Patterson Bldg., engr. CD 11/1/54.

▲ **Tex., Houston**—WAREHOUSE, etc.—BA 4/19—Sears Roebuck & Co., 4207 Main St., 400,000 sq. ft. warehouse, $2,550,000; truck service shop, $150,000. Cowell & Neuhaus, 2303 LaBranch St., archts. B. Johnson & Assocs., 4926 Travis St., and F. J. Niven, 3908 Main St., engrs. CD 3/16.

Tex., Corsicana—BANK and OFFICE—BA 4/27—First National Bank, Corsicana, 4 story, brick, tile, concrete, steel bank and office. $600,000. Plans deposit $50. Preston M. Geren, 1607 Fort Worth Natl. Bldg., Fort Worth, archt. CD 3/9, under LB.

▲ **Mont., Missoula**—SCHOOL—BA 4/28—Missoula County High School District, high school south of here, $2,750,000. CD 4/6.

▲ **Tex., Houston**—HIGH SCHOOL, etc.—BA 5/5—Our Lady of Mt. Carmel Parish, 6710 Whitefriars St., 90,000-sq. ft., concrete frame portion and steel portion co-educational high school and convent. $1,125,000. Plans deposit $50. Golemon & Rolfe, 5100 Travis St., archts. CD 11/19/52.

▲† **Kan., Topeka**—HOSPITAL—BA 6/7—Veterans Admin. Munitions Bldg., Wash. D. C., 1,000-bed N.P. Hospital. $10,000,000. CD 10/7/53.

SOON LETS CONTRACT—BUILDINGS

Tex., Houston—OFFICE—Houston American Life Insurance Co., 4604 Main St., soon lets contract 2 story bsmnt. office. $500,000. Plans deposit $25. Zimmerman & Bible, 500 Stuart Ave., archts.-engrs. Walter P. Moore, 2 Pinedale St., engr. CD 8/19/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

S. J. Groves & Sons Co., Wesley Temple Bldg., Minneapolis, Minn. LB **$517,466.** Schedule I Att. 1 53,700 sq. yd. 12 in. concrete paving, etc.; LB **$477,288** Schedule I, Alt. 2, 53,700 sq. yd. 10 in. granular sub-base and 6 in. crushed aggregate base, Wold-Chamberlain Field, MINNEAPOLIS, MINN. Minneapolis-St. Paul Metropolitan Airports Comn., R. Aldrich, exec. dir., 2429 University Ave., St. Paul, Minn. Bids Mar. 25. CD 3/9.

▲† **C. H. Leavell & Co.**, 1900 Wyoming St., El Paso, Tex., LB **$1,037,887**, storage facilities, Ordnance Storage, Lincoln Air Force Base, Inv. 25-066-55-73. LINCOLN, NEB. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Mar. 29. CD 3/23.

▲ **KANSAS**—Kansas Turnpike Auth., 2306 W. 10 St. Topeka,

Kan.—**George Bennett Constr. Co.**, 3001 N. 7 St. Trafficway Kansas City, Kan., CA **$618,387**, grading, drainage 4.53 mi. Proj. 8-31-E (1), Douglas Co. CD 3/24, under LB;

Kan.—**Condon-Cunningham Co.**, 4229 Lafayette St., Omaha, Neb., CA **$835,170.** grading, drainage 3.41 mi. Proj. 9-37-E (1), Leavenworth and Wyandotte Counties;

Kan.—**John P. Abramson Constr. Co.**, 720 Savings & Loan Bldg., Des Moines, Ia., CA **$594,804**, grading, drainage 6.91 mi. Proj. 5-18-E (1), Lyon Co. Grand total, $2,048,361. Bids Mar. 18, awarded Mar. 28. CD 3/24, under LB.

▲ **KANSAS**—Kansas Turnpike Auth., Wichita,

Kan.—**Clarkson Constr. Co.**, 4113 Gardner St., Kansas City, Mo., CA **$692,525**, grading, drainage 3.35 mi. Proj. 7-28 E (1) Shawnee Co.;

Kan.—**R. G. Aldridge**, 1610 Nebraska St., Kansas City, Kan., CA **$714,106**, grading, drainage 3.98 mi. Proj. 7-29-E (1), Shawnee and Douglas Counties. Bids Mar. 4. CD 3/10, under LB.

KANSAS—Kansas Turnpike Auth., El Dorado,

Rhoades Constr. Co. Inc., P. O. Box 225, Newton, Kan., CA **$561,146**, 8 structures, Contr. 3-11-B (1), Butler Co. Bids Mar. 11, awarded Mar. 28. CD 3/23, under LB.

KANSAS—Kansas Turnpike Auth., El Dorado,

C. F. Lytle Co., Insurance Exchange Bldg., Sioux City, Ia., CA **$508,056** grading, drainage 9.99 mi. Proj. 3-11-E (1), Sedgwick and Butler Counties. Bids Mar. 11, awarded Mar. 28. CD 3/21, under LB.

KANSAS—Kansas Turnpike Auth, Wichita,

Guy H. James Constr. Co., Box 9575, Oklahoma City, Okla., CA **$548,334**, 7 multiple-span continuous bridges with concrete decks, rolled beams or welded plate girders, Proj. 1-4-b (1), Sumner Co. Bids Mar. 4, awarded Mar. 28. CD 3/10, under LB.

KANSAS—Kansas Turnpike Auth., 2306 W. 10 St., Topeka,

Maxwell Bridge Co., Columbus, Kan., CA **$510,701** bridges, Proj. 5-19-B (1) Lyon Co. Bids Mar. 18., awarded Mar. 28. CD 3/24, under LB.

Utilities Engineering & Constr. Co., 2800 N. Santa Fe St., Oklahoma City, Okla. CA **$547,548.** sewage works imprvs., LAWRENCE, KAN. City, Lawrence, Kan. CD 3/2, under LB.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Austin Road Co.**, P.O. Box 1590, Dallas, Tex., LB **$700,896**, flexible base, b. conc. 6.726 mi. Hy. US 90, Proj. IN 1039 (7). Harris Co.; LB **$294,210**, c. conc. and hot mix b. conc. 1.189 mi. Hy. US 59, Proj. F 475 (5), Bowie Co.;

Tex.—**A. L. Bucy**, 804 Avenue I, Brownwood, Tex., LB **$95,309**, grading, structures, base, surf. 1.706 mi. Hy. FM 2231 and SH 6, Proj. R 2095-1-1, etc., Stephens Co.;

Tex.—**Cage Bros.**, 6959 San Pedro St., Antonio, Tex. LB **$115,170**, grading, structures, base, surf. 8.171 mi. Hy. FM 2186, Proj. R 2010-4-1, Tom Green Co.;

Tex.—**Joe Davidson & Dew Constr. Co.**, P.O. Box 439, Terrill, Tex., LB **$235,025**, grading, structures, base and surf. 15.422 mi. Hy. FM 1392, 429 and SH 205, Proj. S 1999 (1), etc., Kaufman Co.;

Tex.—**J. M. Dellinger, Inc.**, P.O. Box 4227, Corpus Christi, Tex., LB **$172,608**, base, two course surf. tr. 22.542 mi. Hy. SH 202, Proj. S 164 (3), Bee Co.;

Tex.—**F & C Engineering Co.**, P.O. Box 2426, Houston, Tex., LB **$844,897**, flexible base, c. conc. and hot mix b. conc. 3.852 mi. Hy. US 90 and SH 235, Proj. IN 149 (11), etc., Orange Co.;

Tex.—**Gaylord Constr. Co.**, 806 Blodgett St., Houston, Tex. LB **$142,667**, b. conc. 24.664 mi. Hy. US 377 and 190, Proj. C 128-3&4-14&10, etc., McCulloch Co.; LB **$132,634**, b. conc. 17.209 mi. Hy. US 87, 290 and SH 29, Proj. C 71-3-13, etc. Mason, Gillespie and Llano Counties;

Tex.—**E. E. Hood & Sons**, Box 6097, Harlandale Station, San Antonio, Tex. LB **$137,188**, grading, structures, base and surf. 12.065 mi. Hy. FM 471, 1976, 2173. Proj. RV 849-1-3, etc., Bexar Co.;

Tex.—**George Kies**, P.O. Box 5187, Austin, Tex., LB **$255,183**, seal coat 208.194 mi. Hy. US 59, 181, 77, 183, 281, SH 9, 359, 44, 35, etc. Proj. C 74-3-5, etc., San Patricio, Jim Wells, Goliad, Karnes, Bee, Nueces, Kleberg, Refugio, Aransas, Live Oak and McMullen Counties;

Tex.—**Norman L. Larson & Dean Skinner**, P.O. Box 5216, Austin, Tex., LB **$1,060,837**, grading, structures 14.418 mi. Hy. US 81, Proj. IN 644 (13), Bell Co.;

Tex.—**Maupin Constr. Co.**, P. O. Box 6567, San Antonio, Tex. LB **$236,748**, recondition flexible base, two course surf. tr. 18.287 mi. Hy. SH 29, Proj. F 705 (5), etc. Llano Co.;

Tex.—**McKown & Sons**, P. O. Box 785, Austin, Tex., Lb **$910,244**, flexible base, hot mix b. conc. 1.832 mi. Hy. US 81, Proj. UI 200 (18), Travis Co.;

Tex.—**Jeff Richards**, 515 Hackberry St., Clifton, Tex., LB **$165,506**, seal coat 202.456 mi. Hy. US 77, SH 36, 144,317, 164, 171. FM 1963, 310, etc. Proj. C 48-6-21, etc. Hill, Coryell, Falls, Bosque, McLennan, Limestone, Hamilton and Bell Counties;

Tex.—**C. Hunter Strain**, P. O. Box 1057, San Angelo, Tex. LB **$193,377**, seal coat 208.289 mi. Hy. US 287, 60, SH 217, etc. Proj. C 66-4-14, etc., Moore, Randall, Gray, Armstrong, Ochiltree, Carson, Sherman, Hansford, Deaf Smith and Potter Counties;

Tex.—**Texas Bitulithic Co.**, P. O. Box 10365, Dallas, Tex., LB **$73,795**, asph. 16.262 mi. Hy. US 59, Proj. C 62-4&5-14&23, etc., Cass, Marion and Harrison Counties; LB **$163,663**, b. conc. 21.146 mi. Hy. US 82,75 and SH 24, Proj. C 46-1-26, etc., Red River, Grayson, Hunt and Delta Counties. Bids Mar. 23. CD 3/1 and 3/7.

▲† **McWilliams Dredging Co.**, Box 584, New Orleans, La., LB **$1,317,867**, est. $500,000-$1,250,000. dredging exten. from Avery Point to Tule Lake (Port Aransas-Corpus Christi Waterway), CIVENG-41-243-55-47, TEXAS. U. S. Eng., Box 1229, Galveston, Tex. Bids Mar. 24. CD 3/16.

▲† **MONTANA**—Bureau P. Rds., Dpt. Commerce, Missoula,

Tony Marrazzo, 308 N. Owyhee St., Boise, Idaho. LB **$1,188,284**. constr. 5.5 mi. forest hy. from Nyack east of U. S. Hy 2 with 2 railway over-crossings, Flathead Co. Bids Mar. 25. CD 3/9.

▲ **NEW MEXICO**—State Hy. Comn., Capitol Bldg., Santa Fe,

N. M.—**Brown Contg. Co.**, 3525 4th St. N. W., Albuquerque, N. M., CA **$466,831**, sub-base, base course hot plant surf., one three-span continuous concrete steel overpass and misc. constr. 3.271 mi. U. S. Hy. 66 from Grants-West. FAP No. F-003-2 (2), Valencia Co.;

N. M.—**Skousen-Hise Contr. Co.**, Springer Bldg., Albuquerque, N. M., CA **$353,477**, sub-base, base course, concrete curb and gutter, hot plant pavement, one continuous slab concrete, steel bridge and misc. constr. 1.892 mi. U. S. Hy. 66 in City of Grants. FAP No. F-003-2 (3), **Valencia Co.;**

N. M.—**Skousen Constr. Co.**, Springer Bldg., Albuquerque, N. M., CA **$347,498, base course, bit. surf., one** three-span precast concrete bridge and misc. constr. 9.378 mi. State Rd. 104 from Gate City-West. FAP No. S-1421 (3), San Miguel Co.;

N. M.—**G. I. Martin**, 400 California St. S. E., Albuquerque, N. M., CA **$83,576**, sub-base, base course, bit. surf., misc. constr. 6.8 mi. State Rd. 120 between Roy and Yates, FAP No. S-1429 (1), Harding Co.; **CA $126,868, sub-base, base course, bit. surf., misc.** constr. 6.949 mi. State Rd. 10 from Mounainair-South, FAP No. S-1500 (1), Torrence Co. Grand total $1,378,250. Bids Mar. 25. CD 3/16.

BUILDINGS

LOW BIDS AND CONTRACTS

Rolph Constr. Co., Luverne, Minn. CA **$507,774**. general contract GRADE SCHOOL, GRADE SCHOOL addn., SHOP addn. to high school, MARSHALL, MINN. Bd. Educ., Dr. M. J. Carrow, clk., Marshall, Minn. CD 3/22, under LB.

▲ **Haren & Laughlin Constr. Co.**, 953 Minnesota St., Kansas City, Kan. CA Est. **$1,000,000**. MOTEL, NORTH KANSAS CITY, MO. Doctors Motels, Inc., Brotherhood Bldg., Kansas City, Kan. Kivett & Myers, 1016 Baltimore St., Kansas City, Mo., archts.

Brockmeyer Constr. Co., 634 N. Grand Blvd., St. Louis 3, Mo. CA Est. **$550,000**. 1 and 2 story, 180x310 ft., brick, steel, concrete, stone PARCEL POST STATION and AUXILIARY GARAGE for lease to U. S. Post Office Dpt., ST. LOUIS, MO. Lex-Way Corp., c/o Enno Kraehe, 34 N. Brentwood Blvd., Clayton 5, Mo. Bids Mar. 15. CD 3/15.

A. Borchman & Sons, 4601 Douglas St., Omaha, Neb., LB **$699,512**, general contr. NURSES HOME at University of Nebraska Medical College and Hospital, OMAHA, NEB. University of Nebraska, 12 and R Sts., Lincoln, Neb.

▲ **Lippert Brothers**, 2800 N. Santa Fe St., Oklahoma City, Okla., CA. **$1,200,000**. Abbey CHURCH, ATCHISON, KAN. St. Benedict's College, Atchison, Kan. Bids Mar. 1. CD 2/14.

Ethelyn Corp., c/o Malcolm McCulloch, 2111 Jensen Dr., Houston, Tex. Own Forces. **$545,190**, (G) 45 DWELLINGS, HOUSTON, TEX. CD 7/28.

Jim West Building Co., 226 Winkler St., Houston, Tex. CA **$415,000**, 44 DWELLINGS; **$356,115**, 32 DWELLINGS, HOUSTON, TEX. Jim West & Assocs., 226 Winkler St., Houston, Tex. CD 1/12.

▲ **Built-Right Homes**, 415 S. Haskell St., Dallas, Tex. Owner Builds. **$1,161,255**, Sect. 3, Group 4, 45 DWELLINGS; Sect. 3, Group 5, 36 DWELLINGS; Sect. 3, Group 6, 46 DWELLINGS, HOUSTON, TEX. CD 11/16.

▲ **Manhattan Constr. Co. of Texas**, 2828 Pease St., Houston, Tex., CA Approx. **$2,300,000**. 7-level PARKING GARAGE, 2,500 automobile capacity, incl. heliport, underground tunnel connecting with two large bldgs., HOUSTON, TEX. Ten Ten Travis Corp. (subsidiary of Tennessee Gas Transmission Corp.) Commerce Bldg., Houston, Tex. Bids Mar. 18. CD 3/11.

Harwell & Harwell, Box 177, San Antonio, Tex., CA **$502,642**. Girls' DORMITORY, KINGSVILLE, TEX. Texas College of Arts & Industries, Kingsville, Tex. Bids Mar. 15. CD 3/22, under LB.

W. G. McMillan & Sons, 709 Avenue J, Lubbock, Tex. CA **$500,000**. HOSPITAL, MONAHANS, TEX. Ward Co., Monahans, Tex. Awarded Mar. 22. CD 7/21.

Parker Bros. & Co., Inc., 5303 Navigation Blvd., Houston, Tex. Owner Builds. **$698,415** (A) 33 DWELLINGS; (C) 39 DWELLINGS, PASADENA, TEX. CD 11/10.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

Calif., San Diego—BA 4/19—San Diego Co., 1600 Pacific Hy., Palm City sewage plant, $182,000, Plans deposit $25; Palm City sewerage system (pipe lines) $531,000, both in Palm City. CD 9/51/52.

▲ **Calif., Los Angeles**—BA 4/21—Los Angeles Dpt. Water & Power, 207 S. Broadway, Pleasant Valley Dam, Owens Gorge Power Proj., Bishop, Inyo Co. $2,000,000. Plans deposit $50. S. B. Morris, c/o owner, engr.

▲ **Calif., Los Angeles**—BA 4/22—Los Angeles County Flood Control District, 2250 Alcazar St., Garvey Ave. Storm Drain, Proj. 268, Pomona, $1,000,000. H. E. Hedger, engr. CD 11/7/52.

BIDS ASKED—BUILDINGS

▲ **Wash., Moses Lake**—SCHOOL—BA 4/19—School Dist. 161, Moses Lake, 29 classroom steel, masonry Junior High School $1,000,000. Plans deposit $50. H. A. Hovind & Assoc., 1500 Westlake Ave. N., Seattle, archts.

▲ **Calif., Fullerton**—HOSPITAL—BA 4/21—Nazareth Mother House, 380 Batavia St., Orange, 4 story, 100-bed St. Jude's Hospital, $1,500,000. J. W. Maloney, Center Bldg., Seattle, Wash., archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Stolte, Inc.**, 1541 N. Foothill St., Pasadena, Calif., LB **$825,699**, airmen's dormitories, Edwards Air Force Base, ENG-04-353-55-109, MUROC, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Mar. 24. CD 3/2.

▲† **Parish Bros. Inc., Parish Bros.; Harms Bros.; and Gordon H. Ball**, 1205 E. 2 and L Sts., Benicia, Calif., CA, **$3,876,149**, parking aprons, dispersal hardstands and taxiways, ENG-04-167-55-40, TRAVIS AIR FORCE BASE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids Mar. 9. CD 2/9.

BUILDINGS

LOW BIDS AND CONTRACTS

M. B. Randall, 73 E. Palm St., Pasadena, Calif., CA **$725,900**, 84 frame stucco DWELLINGS, Shady Dale and Hartsville Sts., PUENTE, CALIF. Robina Elite Homes, 73 E. Palm St., Pasadena, Calif.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

April 26 Nova Scotia

Yukon Territory, Whitehorse—BA 4/25—Yukon Territorial Govt., Whitehorse, water and sewer services at Whitehorse, pumping station clear water reservoir, $800,000. Canadian-British Eng. Consultants, 1654 Avenue Rd., Toronto, Ont., engrs. CD 10/26.

BIDS ASKED—BUILDINGS

▲ **Que., Montreal**—OFFICE—BA 4/12—Canadian Overseas Telecommunications Corp., 211 St. Sacrement St., office, University and Belmont Sts. $1,200,000. A. L. Perry, 1434 St. Catherines St. W., archt. CD 12/21.

▲ **Sask., Saskatoon**—HOSPITAL—BA 4/25—Saskatoon City Hospital, City Hall, 4 story, bsmnt., 48x150 ft., 48x50 ft., rein.-con., brick, T-shaped hospital addn., replacing center block. $1,000,000. Govan, Ferguson, Lindsay, Kaminker, Langley & Keenleyside, 515 Jarvis St., Toronto, Ont., archts. Angus Butler & Assocs., Northern Hardware Bldg., Edmonton, Alta., engrs. CD 1/6.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

BRITISH COLUMBIA—B. C. Govt., Douglas Bldg., Victoria,

W. C. Arnett & Co. Ltd., Yale, B. C., CA **$691,101** reconstr. 5.04 mi. Canoe-Sicamous Section, Trans-Canada Hy. Bids Jan. 28, awarded Mar. 22. CD 2/16, under LB.

Emil Anderson Constr. Co. Ltd., Hope, B. C., LB **$544,035**, 19 mi. section of roadbed for extension of PGE Railway north of Prince George from Mile 38.0 to Mile 57.0, north of Prince George, BRITISH COLUMBIA. Pacific Great Eastern Ry. Co., W.A.C. Bennett, pres., 736 Granville St., Vancouver, B. C. Bids Mar. 24. CD 3/11.

Standard Dredging Co., Burma Road, East St. John, N. B., CA **$512,620**, transit sheds at Pugsley Terminal Wharf Exten. ST. JOHN, N. B. National Harbor Bd. Parliament Bldgs., Ottawa, Ont. Bids Feb. 9. CD 2/16, under LB.

Chisholm Constr. Co. Ltd., College St., Antigonish, N. S., LB **$662,157**, harbor development in White Bay District, LA SCIE, NEWFOUNDLAND. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Mar. 23. CD 3/1.

Mathews Concrete Ltd., 459 Princess Ave., London, Ont., LB, **$628,000**. storm sewers, SARNIA, ONT. City, F. J. Hill, city clk., City Hall, Sarnia, Ont. Bids Mar. 21. CD 2/18.

S. McNally & Sons Ltd., 2200 King St. E., Hamilton, Ont., CA, **$536,442**, 36 and 42 in. water mains from Avenue Rd. and Caribou Ave. to Lawrence Ave. and Caledonia Rd., TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Awarded Mar. 23. CD 3/22, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

MacWilliam Constr. Co. Ltd., Cheadle and 5 St., Swift Current, Sask., CA, **$501,325**, concrete, steel, brick Gilbert Patterson JUNIOR HIGH SCHOOL, LETHBRIDGE, ALTA. Lethbridge Public School Bd., Lethbridge, Alta. CD 2/28, under LB.

Procon Constr. Co. Ltd., 40 Advance Rd., Toronto, Ont., CA **$750,000**. CATALYTIC REFORMER addn. to new refinery, BURNABY, B. C. Standard Oil of B. C. Ltd., Burnaby, B. C. J. M. Evans, 225 Busch St., San Francisco, Calif., U. S. A., engr. Awarded Mar. 23. CD 8/28/51.

Wyatt Constr. Co. Ltd., 383 McMillan Ave., Winnipeg, Man., LB, **$517,000**, UNIT FOR FEMALE PATIENTS at Manitoba School for Mental Defectives, PORTAGE LA PRAIRIE, MAN. Dpt. P. Wks., Parliament Bldg., Winnipeg, Man. Gilbert Parfit, c/o owner, prov. archt.

▲ **Robert-Yates Corp.**, 400 Wellington St. N., Hamilton, Ont., CA, **$1,285,591** BARRACK BLOCKS, 4-mess bldgs. at Army Camp, PETAWAWA, ONT. Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. CD 12/15.

▲ **Home Builders, Inc., & Raymond Jezequel, Inc.**, 18 Lakeshore Rd., Beaconsfield, Que., Owner Builds, **$1,100,000**. 80 unit, wood frame, brick HOUSING, Madsen Ave., BEAUREPAIRE, QUE.

Georges Goyette, 10880 Esplanade Ave., Montreal, Que., CA Est. **$625,000**, 50 COTTAGES in housing program, First Ave., MONTREAL, QUE. Roxboro Enterprises Regd., 2356 Belanger St. E., Montreal, Que. Elio Vincelli, 429 Jean Talon St. W., Montreal, Que., archt. Awarded Mar. 21.

▲ **Hercules Development Corp.**, 4965 Bessborough Ave., Montreal, Que., Owner Builds, **$1,300,000**, 130 houses in housing program at Trudeau and Hilmore Sts. in suburban area of Chateauguay Heights, MONTREAL, QUE. Shorey, Ritchie & Douglas, 4147 Sherbrooke St. W., Montreal, Que., archts.

▲ **Bergerville Estates Ltd.**, 245 Blvd. des Capucins, Quebec City, Que., CA, **$1,000,000**, 2 story, 90x230 ft., steel, brick, stone STORES, OFFICES, MEETING HALL, etc., Ste. Foye Rd. and Joffre Ave., QUEBEC CITY, QUE. Army, Navy & Air Force Veterans' Assn., 13 Rue Joachim, Quebec City, Que. Paul Rousseau, 581 St. Cyrille St., Quebec City, Que., archt. Awarded Mar. 21.

Damien Boileau Ltd., 705 Beaumont Ave., Montreal, Que., CA, **$600,000**, 3 story, bsmnt., 48x295 ft., rein.-con., stone, brick CONVENT, ST. BRUNO, QUE. Sisters of the Sacred Heart, St. Bruno, Que. Crevier, Lemieux & Mercier, 1065 Pratt Ave., Montreal, Que., archts. Brouillet & Carmel, 515 Demontigny St. E., Montreal, Que., engrs. Awarded Mar. 15.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **ALASKA**—Alaska Road Comn., Dpt. Interior, Box 1961, Juneau,

McLaughlin, Inc., Ford Bldg., Great Falls, Mont., LB **$829,480**, plant mix paving 45 mi. Richardson Hy., Mile 36 to Mile 82. Bids Mar. 22. CD 3/2.

U. S. POSSESSIONS

BIDS ASKED—BUILDINGS

▲ **Virgin Islands, St. Croix**—SCHOOLS—BA 5/18—Govt. Virgin Islands, P. Wks. Comn., Charlotte Amalie, Saint Thomas, Proj. 21, Elementary Junior High School and Kings Hill Elementary School, 1 story, rein.-con. constr., $1,200,000. Plans deposit $75. M. A. Dyer Co., 24 School St., Boston, Mass., archt.

AMERICANS ABROAD

BIDS ASKED—HEAVY CONSTRUCTION

Bids will be taken on the following projects under International competitive bidding of NATO.

ITALY

Ministero della Difesa-Aeronautica, Direzione Generale Domanio, Viale Castro Pretorio, Rome.

rigid and flexible runways on landing fields near Catania, est. $4,160,000, Firms wanting to bid must apply prior to April 20; constr. rigid and flexible runways on landing field at Chinisia Birgil in Sicily, est. $4,400,000, Firms wanting to bid must apply prior to April 15. For information on bidding NATO projects see 6/25 Construction Daily.

(Proposal Advertisements see pp. 118 to 122)

MUELLER

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Consult your Mueller Representative, your Mueller W-96 Water Works Catalog or write direct for full details.

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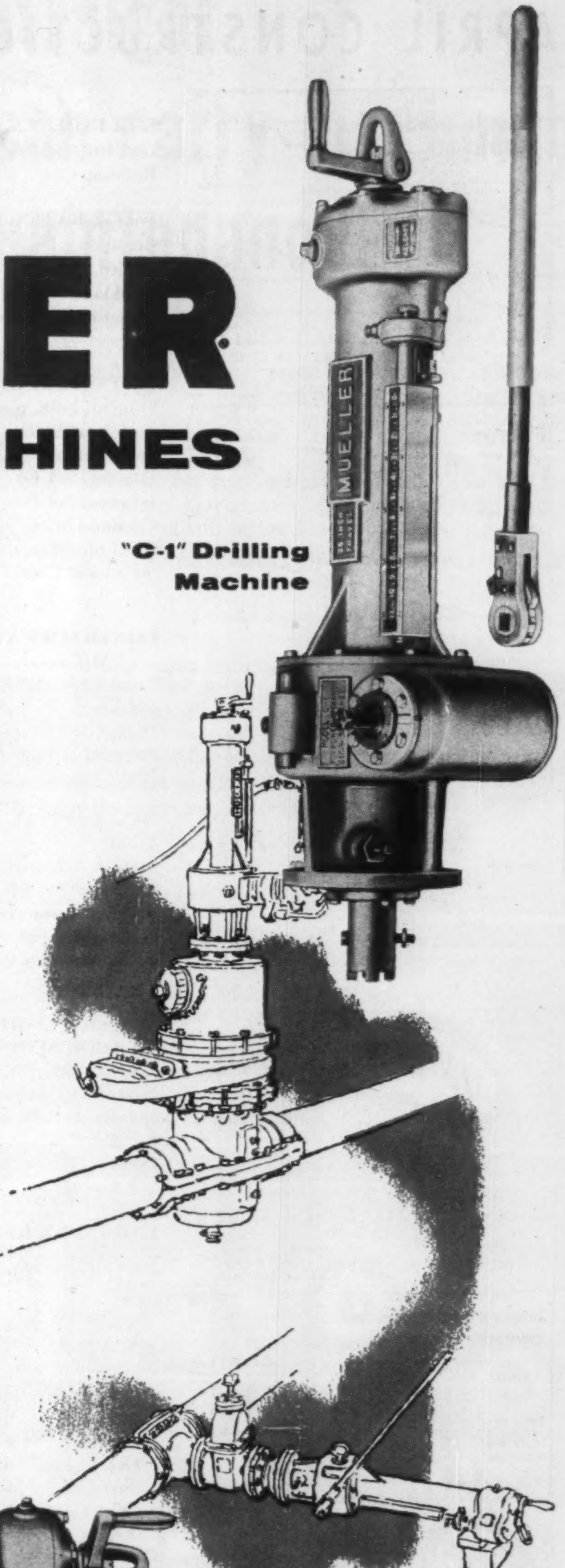
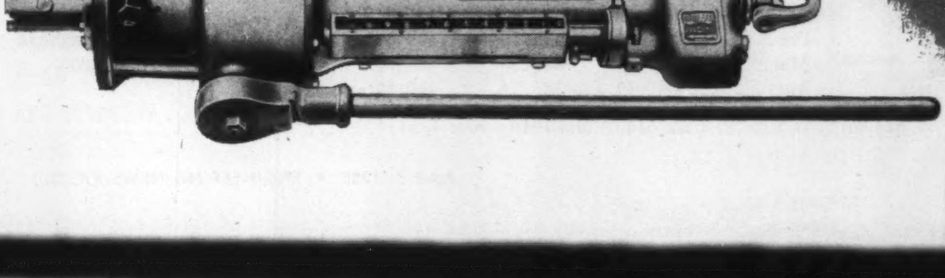
Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS

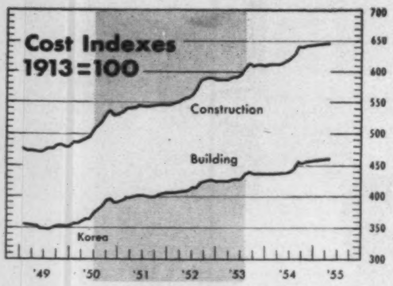


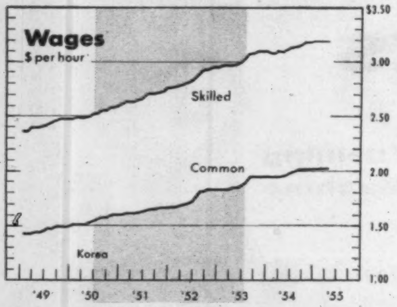
"C-1" Drilling Machine

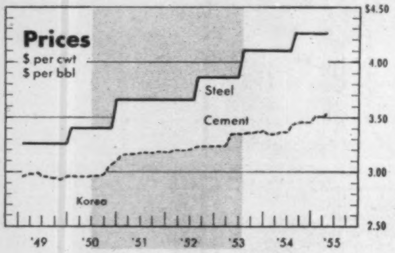


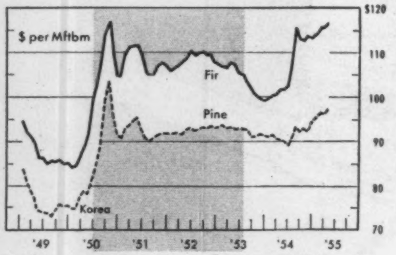
"CC" Drilling Machine

APRIL CONSTRUCTION SCOREBOARD

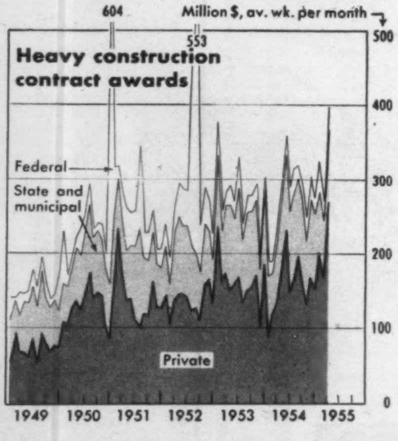








© Engineering News-Record



	1955	% Change from last	
ENR INDEXES (1913=100), 20-cities' average	**Apr.**	**Month**	**Year**
Construction Cost	647.49	+0.3	+ 5.2
Building Cost	460.62	+0.2	+ 5.3
WAGE RATES, 20-cities' average			
Common	$2.025	+0.2	+ 3.9
Skilled (aver. 3 trades)	3.190	0.0	+ 3.0
Bricklayers	3.457	0.0	+ 2.6
Structural Ironworkers	3.171	0.0	+ 3.4
Carpenters	2.941	0.0	+ 2.9
MATERIAL PRICES, 20-cities' average			
Cement, bulk, per bbl	$3.541	+0.5	+ 5.1
Structural Steel, (3-mill aver.), per cwt	4.250	0.0	+ 3.7
Sand, per ton	2.317	+0.6	+ 3.8
Lumber, 2x4 Fir, per M. ft. bm	116.792	+0.7	+14.9
Lumber, 2x4 Pine, per M. ft. bm	97.433	+1.0	+ 8.0
Common brick, per M	33.417	+0.4	+ 0.8
Read-mixed concrete, per c. y	12.384	−0.2	+ 3.3
Structural Clay Tile, 3x12x12 per M	160.541	+0.5	+ 0.04

	1955		% Change from '54	
CONTRACTS AWARDED (Millions)	**Mar. (5-Weeks)#**	**3-Mos. (13-Weeks)#**	**Mar. (4 Weeks)#**	**3-Mos. (12-Weeks)#**
Total U. S. (ENR reported)	$1986.8	$4367.0	+ 70.2	+63.4
Private	1340.8	2820.2	+103.5	+94.7
Public	646.0	1546.8	+ 27.1	+26.4
Federal	155.9	423.2	+119.3	+89.1
ENR Volume Index, '13=100	691	570	+ 62.2	+54.1
NEW CAPITAL (Millions)				
Total	785.4	1,830.0	+ 3.7	+ 4.6
State & Municipal Bond Sales	445.9	1,044.7	− 13.6	+ 9.6
Corporate Security Sales	334.3	763.3	+ 41.8	− 0.9
Federal (non-federal work)	5.2	22.0	− 12.3	−15.9
Federal (federal work)	....	....	....	......

Computed on weekly average.

			% Change from	
MATERIAL SHIPMENTS & LABOR SUPPLIES (millions)	**Dec '54 (D) Jan '55 (J) Feb '55 (F)**	**12 Mos.(12) 2 Mos. (2)**	**Mo.**	**Yr-Cum.**
Cement, bbls. Bu. of Mines	16.347(D)	274.096(12)	+15.7	+ 5.1
Fabr. Struc. Steel, tons AISC	.200(F)	.426(2)	−20.9	−14.6
Lumber, mil. ft. bm., NLMA	2.853(J)	37.401(2)	+ 9.6	− 2.9
Lumber Prod., mil. ft. bm., NLMA	2.830(J)	37.466(12)	+ 2.9	− 4.6
Contract Const. Employ., BLS	2.269(F)	2.314(12)	− 3.7	− 1.6

† Average

ENR INDEX REVIEW

	Construction Cost		Building Cost		Volume	
	1913=100	1949=100	1913=100	1949=100	1913=100	1949=100
1954						
Apr.	615.38*	129.01*	437.48	124.44	517	149
May	618.71*	129.70*	438.24	124.65	648	187
June	621.91*	130.37*	439.67	125.06	510	147
July	628.26*	131.71*	444.05	126.23	547	158
Aug	641.68*	134.52*	455.54	129.49	525	152
Sept	640.18*	134.21*	454.28	129.13	503	145
Oct	641.49*	134.48*	455.54	129.49	423	122
Nov	642.42*	134.67*	456.34	129.72	522	151
Dec	642.71*	134.74*	456.77	129.84	464	134
Av.	627.96*	131.64*	445.68	126.73	481	139
1955						
Jan	643.72	134.95	457.91	130.17	560	162
Feb	645.24	135.26	459.43	130.60	459	133
Mar	645.70	135.36	459.63	130.65	691	200
Apr	647.49	135.74	460.62	130.94	...	...

* Revised. Also, 1913=100: 1/54, 614.06; 2/54, 614.73; 3/54, 614.01 and 1949=100: 1/54, 128.73; 2/54, 128.87; 3/54, 128.72.

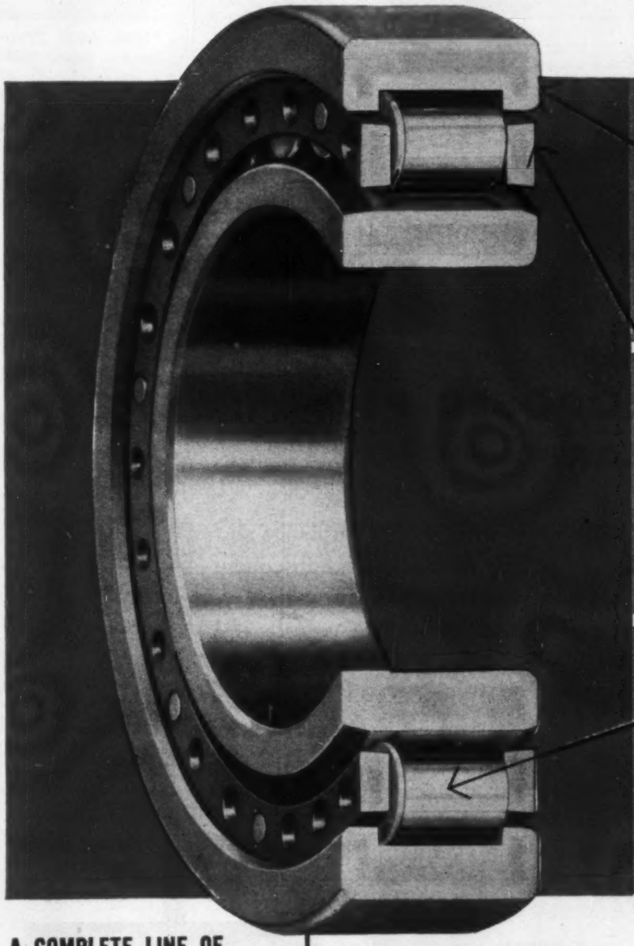
Here's why BOWER straight roller bearings can carry maximum loads—with less maintenance!

The important design features of Bower straight roller bearings shown on this page are just a few of the reasons why these bearings will operate efficiently and economically in your product. Consider these facts, too. Bower straight roller bearings incorporate highest quality materials and workmanship. They have proved themselves capable of standing up day in and day out under maximum loads—with little or no maintenance.

In fact, this is the reason why Bower straight roller bearings are used extensively by leading manufacturers in such fields as automotive, earthmoving, farm equipment and machine tool.

Let a Bower engineer give you full details of the complete Bower line. Call him in while your product is still in the blueprint stage.

BOWER ROLLER BEARING COMPANY • DETROIT 14, MICHIGAN



● ***TWO-LIP RACE INCREASES RIGIDITY.*** These two shoulders, made parallel, are integral with the outer race. This provides a more rigid, durable construction. Rollers are kept in proper alignment at all times.

● ***COMPOSITE STEEL CAGE DOES NOT CONTACT ROLLERS DURING NORMAL OPERATION,*** thereby allowing free movement of the rollers between the races. Projections on the inner faces of the rings engage indentations on the roller ends preventing the rollers from dropping out of position when the separable race is removed.

● ***PRECISION-BUILT ROLLERS AND RACES ARE MADE TO SUPPORT MAXIMUM RADIAL LOADS.*** Only the highest grade steel-alloy is used, and rollers and races are precision ground to give quieter, smoother operation. Running clearance is built in at the time of manufacture.

A COMPLETE LINE OF TAPERED, STRAIGHT AND JOURNAL ROLLER BEARINGS FOR EVERY FIELD OF TRANSPORTATION AND INDUSTRY

BOWER
ROLLER BEARINGS
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Two SMS-Francis turbines at Tenkiller Ferry Dam on the Illinois River in Oklahoma are rated at 23,000 hp each under 132 feet net head.

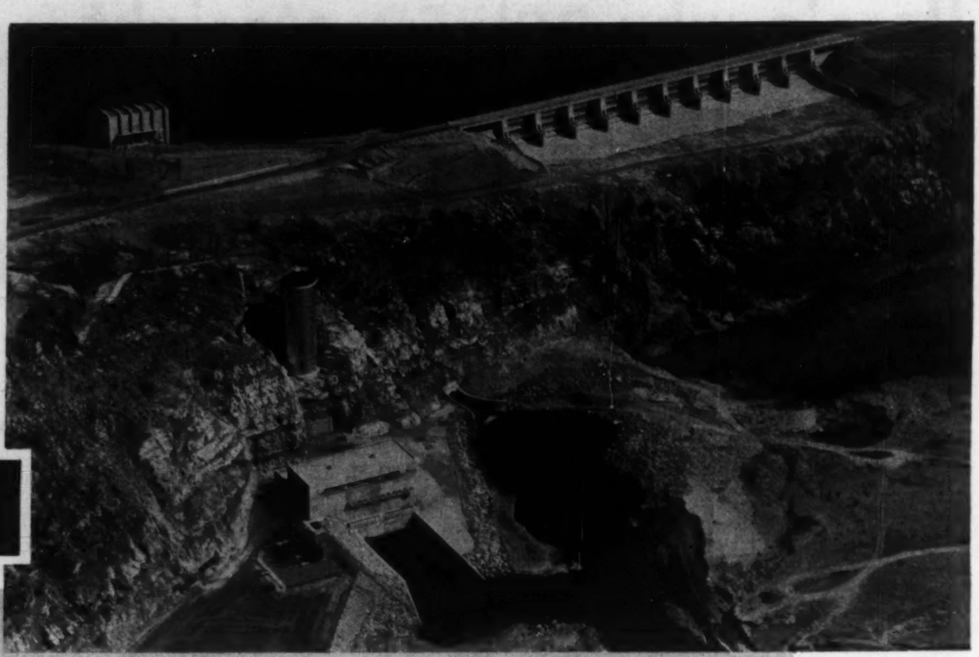
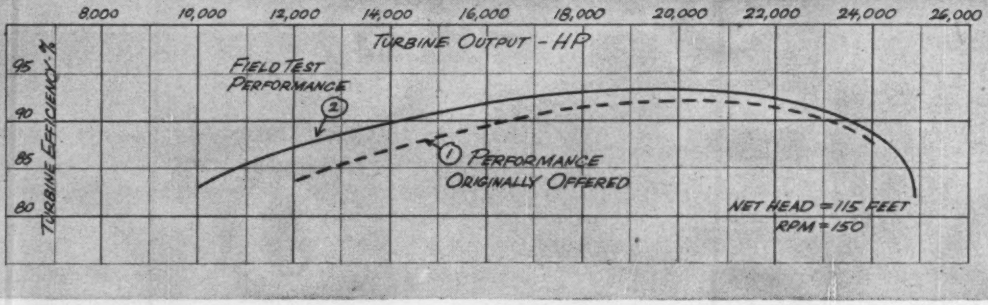


Photo: *Aerial Photo Service, Tulsa, Okla.*

SMS
FRANCIS TURBINES



FIELD TESTS EXCEED PROPOSED PERFORMANCE AT TENKILLER FERRY DAM

Existing designs at the time of the proposal enabled SMS to offer the performance shown on Curve 1 (above) for the Tenkiller turbines which are of only medium size. Subsequent homologous model tests required by the Corps of Engineers led to improvements which were incorporated in the final design. These resulted in the performance shown by Curve 2, plotted from actual field tests made at 115 feet net head. Actual efficiency exceeded the initially proposed performance at all loads.

This illustrates that the outstanding performance of SMS products results from laboratory research as well as from specialized engineering and production. For information on SMS turbines and related hydraulic equipment, write to the S. Morgan Smith Company, York, Pennsylvania.

SMS
S. MORGAN SMITH CO.

AFFILIATE COMPANY: S. MORGAN SMITH, CANADA, LIMITED, TORONTO

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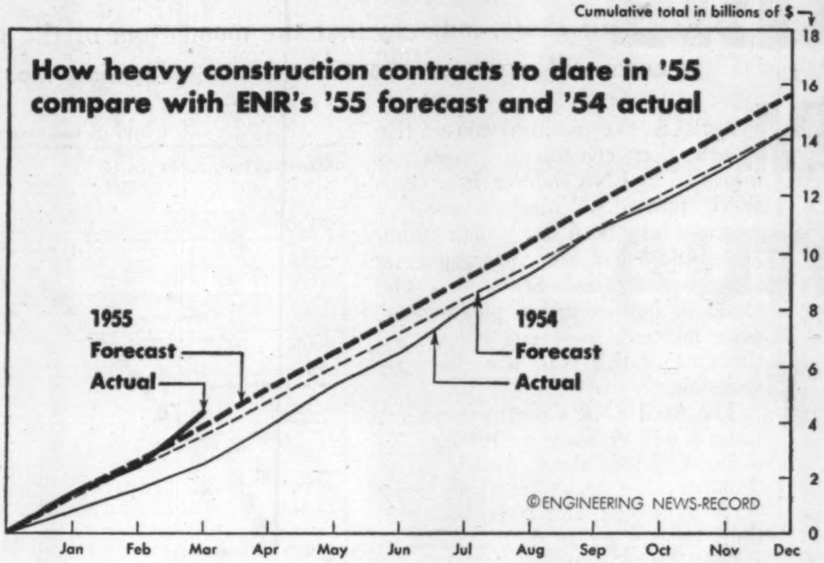

How heavy construction contracts to date in '55 compare with ENR's '55 forecast and '54 actual

March Was a Terrific Month

Heavy construction contract awards reported to ENR broke all March records with a smashing $2 billion in awards. This is also the biggest dollar volume of contracts ever reported for any month, except December 1950 and July and August 1952 when contracts for the big atomic energy plants were awarded. The terrific pace of March awards brought the quarter-volume to a record $4.4 billion, 63% above last year and 8% above the previous high in 1953 (page 21).

- **Housing is sensational**—Private mass housing totaled a sensational $870 million for March—44% of total volume. No other month in history comes close to this. Commercial building awards were $219 million for March—more than the first two months of this year combined and a record for any month. Shopping centers are the big factor here.

- **Industrial**—Industrial building contracts showed a moderate gain in March over February and were higher than March 1954. However the gain over last year is due mainly to the very low volume of industrial awards a year ago.

The $40 million per week average of industrial building awards so far this year is running close to the ENR estimate for this year of a 6% rise. That averages out to a little over $38 million per week.

- **Public works**—State and municipal contracts set a new March record, with a total of $490 million. Federal awards were $156 million, well above February. The result is that public work contracts as a whole are ahead of March 1954.

- **Housing by regions**—For the first quarter as whole, the Middle Atlantic, Middle West, West-of-Mississippi, and Far West are setting the pace in housing awards. The Middle Atlantic leads with dollar volume of $641 million, a 111% increase from the first quarter of 1954. The Middlewest comes next on dollar volume with $470 million, up 107%. The West-of-Mississippi shows a 288% jump to $331 million, and the Far West a 267% gain to $165 million. The South has $108 million in awards for a comparatively modest 45% gain. And in New England total housing awards for the first quarter are $32.7 million, up 76%.

(B&F continued on page 114)

ENGINEERING CONSTRUCTION CONTRACTS—MARCH 1955

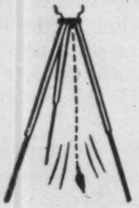
ENGINEERING NEWS-RECORD *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000*

Five Weeks—Thousands of Dollars (000 Omitted)

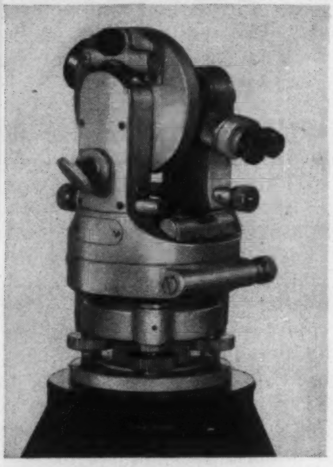
	March 1955							U. S. Cumulative Three Months		%	
	New England	**Middle Atlantic**	**South**	**Mid-West**	**West of Mississippi**	**Far West**	**Total U. S.**	**1955 (13 weeks)**	**1954 (12 weeks)**	**Change '54 to '55 Av. Wk.**	**Canada March 1955**
Public Works											
Waterworks	373	2,316	3,310	2,452	6,686	4,872	**20,009**	**69,386**	44,510	+44	1,818
Sewerage	1,979	6,818	7,168	7,894	8,235	6,216	**38,310**	**95,271**	71,699	+23	793
Bridges	2,155	10,739	4,492	6,200	12,020	1,775	**37,381**	**113,501**	99,558	+ 5	6,474
Earthwork and drainage	353	5,210	820	530	14,679	8,374	**29,966**	**90,094**	66,836	+24	14,829
Streets and roads	32,586	34,036	34,623	33,154	46,948	12,603	**193,950**	**433,410**	263,500	+52	1,098
Public buildings, residential	2,534	1,174	3,153	15,311	3,754	11,590	**37,516**	**45,608**	39,960	+ 5	....
Other public buildings	17,509	26,149	58,456	34,825	31,854	22,127	**190,920**	**426,204**	385,411	+ 2	41,224
Unclassified	4,300	24,744	20,164	2,419	28,798	17,561	**97,986**	**273,344**	158,275	+59	4,028
Total public	**61,789**	**111,186**	**132,186**	**102,785**	**152,974**	**85,118**	**646,038**	**1,546,818**	**1,129,749**	**+26**	**70,264**
Federal government (included in above classifications)	**4,780**	**11,547**	**58,262**	**4,468**	**42,075**	**34,776**	**155,908**	**423,188**	**206,611**	**+89**	**1,400**
Private											
Bridges	....	....	....	....	....	1,300	**1,300**	**1,500**	110	+1178	....
Industrial buildings	4,645	44,432	9,887	75,564	20,523	13,252	**168,303**	**518,336**	316,468	+51	14,655
Mass housing	16,622	345,747	48,078	294,251	141,270	24,223	**870,191**	**1,747,201**	724,570	+123	37,272
Commercial buildings	6,791	124,333	26,845	26,314	30,771	4,029	**219,083**	**402,671**	247,774	+50	25,739
Unclassified	5,276	1,324	15,073	5,501	36,035	18,717	**81,926**	**150,499**	47,887	+190	1,789
Total private	**33,334**	**515,836**	**99,883**	**401,630**	**228,599**	**61,521**	**1,340,803**	**2,820,207**	**1,336,809**	**+95**	**79,455**
Total Engineering Construction;											
March 1955—5 weeks	**95,123**	**627,022**	**232,069**	**504,415**	**381,573**	**146,639**	**1,986,841**	....	....	....	**149,719**
February, 1955—4 weeks	51,478	303,408	131,616	202,771	265,096	130,505	**1,084,874**	....	....	....	150,822
March, 1954—4 weeks	30,087	270,443	132,495	194,757	194,836	111,019	**933,637**	....	....	....	85,549
Three Months—1955	**213,763**	**1,338,508**	**456,134**	**959,037**	**949,083**	**450,500**	....	**4,367,025**	....	**+63**	**386,076**
Three Months—1954	110,858	678,258	396,720	537,845	483,720	259,157	....	....	2,466,558	....	225,681
% Change '54 to '55 (Av. Wk.)	+78	+82	+6	+65	+81	+60	....	....	....	....	+58

SURVEYING NEWS

NEW THEODOLITE SETS UP QUICKLY, EVEN IN THE WIND



Has this been your problem? Now—old-type mechanical plumb-bob replaced by can't-miss optical principle



- Improved Theodolite reads horizontal and vertical circles simultaneously, through same eyepiece
- Reads direct to 1 min. with no matching of lines—no parallax
- Amazingly blur-free—small, compact, moisture-proof, dust-proof.

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Costs Keep Edging Steadily Upward

And Petit charts indicate that the momentum of the rise in costs will continue about the same in coming months

April is the seventh consecutive month that construction costs, as measured by ENR indexes, have crept slowly upward. While the monthly increases have been small, their cumulative effect has been to raise costs more than 1% since September. The climb in lumber prices, plus cement price increases in several cities since the start of this year, have been responsible.

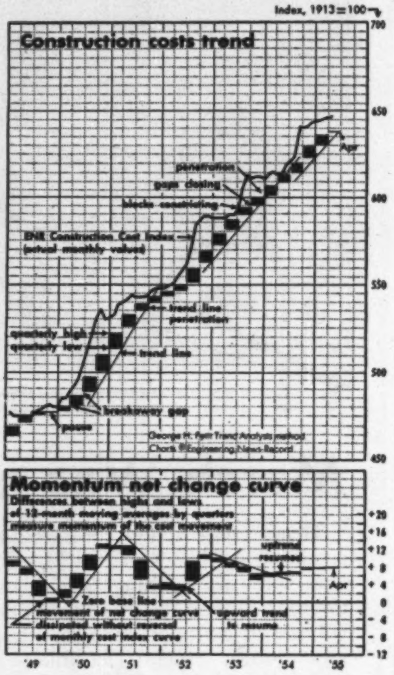
The April ENR Construction Cost Index is 647.49, based on 1913 = 100, a slight 0.3% above March. The Building Cost Index for April is up 0.2% to 460.62, also based on 1913. Both indexes are at their highest on record. The Construction Cost Index is up 5.2% in the past year; the Building Cost Index is up 5.3%.

• **Slow but steady**—It's worth noting that the gradual increase since September is more than in the corresponding period a year ago. For the Construction Cost Index, it is 1.1%, compared to 0.7% in the previous period. For the Building Cost Index, it is 1.4%, compared to 0.3% in the like period of 1953-1954.

Lumber price boosts in nine cities offset a drop in one city (San Francisco) this month. Cement prices moved up in three cities. These movements account for the April rise. The wage front is seasonally quiet this month.

• **Petit charts**—As the Petit Cost Trend chart (above) shows, the momentum of the current rise in costs continues with full force. The last solid block in the top chart, showing the range of costs in the first quarter of this year, is about the same as in the final quarter of 1954. (For a complete explanation of how both charts work, see ENR Oct. 7, 1954, opposite page 82).

The bottom chart is designed to give advance warning of changes in the momentum of cost rises or declines. It indicates that costs will continue rising at about the same rate. Of course, when new wage contracts come up for renewal, there may well be another round of wage boosts which will push costs higher. The effect of this is not predicted in the Petit chart.



• **Close watch**—Contractors will be wise to watch their costs and their bidding closely in the months to come. Many of them already have trimmed their profit margins to the vanishing point to get jobs in today's expanding but very competitive market. Unless they allow for increases in costs, some may take losses.

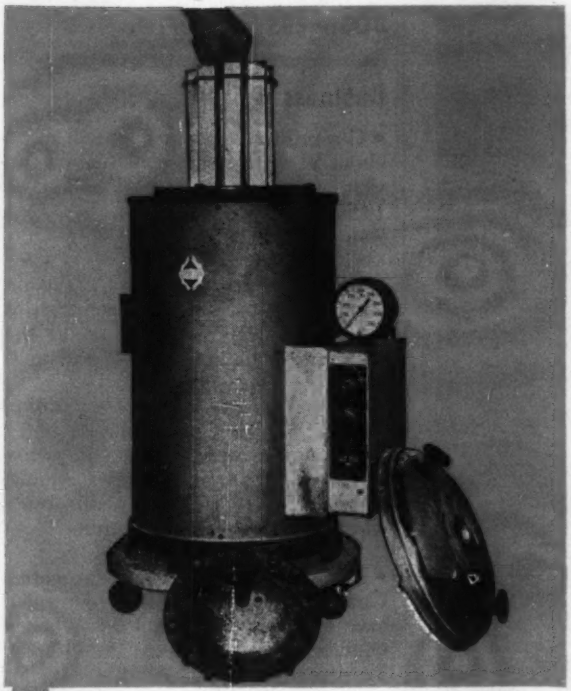
Parkway Authority Planned For Westchester Financing

Westchester County, just above New York City, has worked out a financing method to pay for multi-million-dollar improvements to its Hutchinson River and Cross-County Parkways (ENR Jan. 27, p. 124).

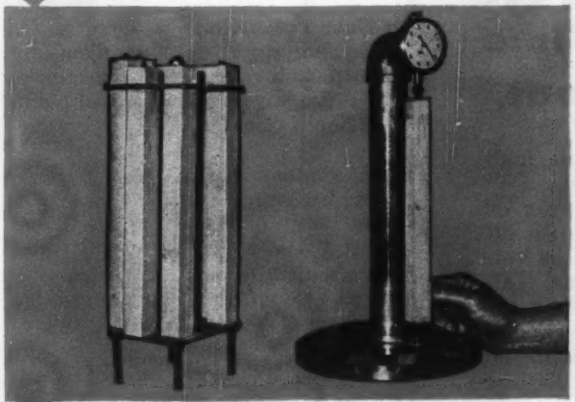
The legislature has just passed a bill setting up a Westchester County Parkway Authority, to be composed of the unsalaried members of the County Park Commission. It will be able to borrow money on the security of tolls and concession fees from the Westchester Parkway system.

The authority plans a $35-million program to widen the Hutchinson River Parkway and modernize the Cross-County Parkway. However, construction is not expected to start until work in Westchester is finished on the New York and New England Thruways, probably sometime next year.

(B&F continued on page 116)

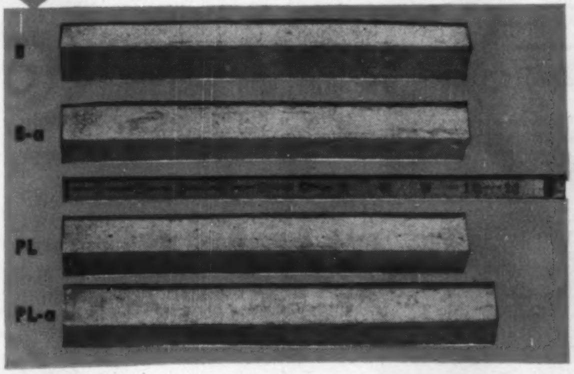


The autoclave test requires the use of a high pressure steam chest (above). Masonry cement bars approximately 1" x 1" x 10" are exposed to 295 lbs. steam pressure, 420° F., for 3 hours. Measurements of the bars are made before and after test as shown below.



Below: Bars of Brixment, and of portland cement and a lime which does not meet the autoclave test. The expansion of the portland cement and lime bar, after autoclaving, is quite evident.

- **B**—Brixment, not autoclaved.
- **B-a**—Brixment, autoclaved.
- **PL**—Cement and lime (1 to 1) not autoclaved.
- **PL-a**—Cement and lime (1 to 1) autoclaved.



BRIXMENT MEETS AUTOCLAVE TEST!

Sound mortar is essential for strong, durable brickwork. To be sound, mortar must be free of constituents which may cause abnormal expansion after long exposure to weather.

Unsoundness in mortar material is readily detected by the autoclave test. This severe test rapidly accelerates the chemical reaction of mortar materials, and the slightest unsoundness is immediately revealed by excessive expansion.

Brixment easily meets the autoclave test requirements of the Federal and ASTM specifications. It also complies with the strength requirements of both specifications, for Type II masonry cement. Therefore, when Brixment is used, sound mortar and strong, durable brickwork are assured.

LOUISVILLE CEMENT COMPANY
Louisville 2, Kentucky

BRIXMENT
A WATERPROOFED CEMENT FOR MASONRY
BRIXMENT

How a Sherman Power Digger Does More Work in Less Time with No Standby Equipment

Nearly every department in the city of Hopkins, Minnesota, finds a use for this versatile Sherman Power Digger.

The Water Department uses the machine when cutting off discontinued service lines at the main. They dig a hole in the street (usually blacktop) 3′ wide by 6′ long by 8′ deep. The hole must be plumbwalled for minimum replacement of paving. This operation used to tie up a truck all day, an air compressor half a day, and two men with hand tools, a full day.

Using a Sherman Power Digger, they now do *three* such jobs in one day, with only one man on the digger, no truck, and no compressor, except for concrete pavement. The job goes faster because they can dig the hole, shut off the line, and backfill before the walls begin to cave. Local soil conditions formerly required cribbing many of these excavations.

If *your* work involves the construction or maintenance of underground facilities, you will profit with a Sherman Power Digger. It's compact, fast, and flexible, with low initial cost and amazing economy of operation. Write today for full details, without obligation. Ask for Bulletin No. 1412.

*Designed, Engineered and Manufactured Jointly by Sherman Products, Inc., Royal Oak, Michigan. Wain-Roy Corporation, Hubbardston, Mass.

•

Patent No. 2-303-852
Other Patents Pending

•

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Business Briefs . . .

• **Gas utilities and pipelines** will spend about $1.4 billion on construction this year, compared with $1.1 billion in 1954, that's the word from the American Gas Assn.

• **Oil companies** are expected to spend about $590 million for pipelines this year and in 1956, according to the Committee for Pipe Line Companies.

• **Another atomic plant**—The Yankee Atomic Electric Co., a combine of 11 New England utilities, has sent a proposal to the Atomic Energy Commission for a 100,000 kw plant somewhere in western Massachusetts.

• **Turnpike contracts below estimate**—Contracts for the Kansas Turnpike have been running about 15% below engineers' estimates, says the Kansas Turnpike Authority. Work under contract is now about one-eighth of total work planned on the 236-mi toll road from Kansas City to the Oklahoma line. The pike is expected to be finished early in 1957.

• **Duke Power Co.**, Charlotte, N. C., plans to spend $300 million for construction over the next decade in the expanding Piedmont area of North and South Carolina.

• **A gypsum deposit** near Lovlock, Nev., has been bought by Pabco Products, Inc., of San Francisco, from Ideal Cement Co., Denver. Pabco plans a plant to produce gypsum wallboard, gypsum lath, and plaster for the northern California market.

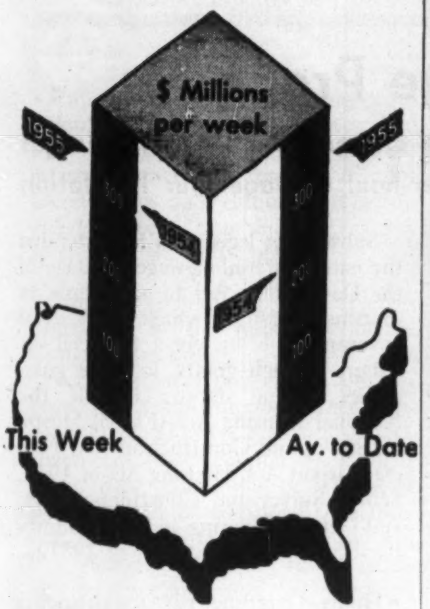
• **Thomas Industries, Inc.**, of Louisville, Ky., has purchased Wright Power Saw & Tool Corp., Stratford, Conn. Thomas makes home lighting fixtures and spray equipment. The New York venture-capital firm of J. H. Whitney & Co. has a financial interest in both companies.

• **Philadelphia Electric Co.** plans to spend over $300 million during the next five years, much of it for new transmission and distribution lines. The utility will spend $76 million in 1955 alone, about $100 million more than last year.

• **Crane Co.** will build a large chemical extraction plant at Chattanooga, Tenn., to produce thorium, misch metal, cerium oxide, and rare earth fluoride from monazite. Thorium is used as a fuel for atomic breeder reactors.

Activity This Week

As reported to ENR
(in millions of dollars)



Amount of contracts let

	This Week	Cumulative 14 wks 1955	1954	% chge
Federal	$28.0	$451.2	$247.6	+82
State and municipal ...	150.3	1,273.9	1,142.7	+11
Total public....	178.3	1,725.1	1,390.3	+24
Total private...	156.7	2,976.9	1,720.0	+73
U. S. Total....	$335.0	$4,702.0	$3,110.3	+51

Contracts by type of work

Waterworks	$4.1	$73.4	$52.4	+40
Sewerage	8.5	103.9	87.4	+19
Bridges	10.8	125.8	114.1	+10
Highways	34.6	467.8	370.6	+26
Earthwork, waterways ...	31.7	121.7	73.2	+66
Buildings:				
Public, excl. hsg.	28.4	454.5	446.8	+2
Housg., public	6.7	52.3	49.2	+6
Housg., private	78.1	1,825.3	954.9	+91
Commercial ..	17.4	420.3	300.2	+40
Industrial ...	49.5	567.8	406.4	+40
Unclassified	65.2	489.2	255.1	+92
Total	$335.0	$4,702.0	$3,110.3	+51

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

New capital for construction

(millions of dollars)

	Week of Mar. 31 1955	Cumulative 13 wks 1955	% chge '54-'55
Corporate securities......	$24.4	$763.3	+1
State and municipal:			
All except housing.....	67.2	1,008.7	+7
Housing	...	36.0	+9
Federal loans	1.7	22.0	−18
Federal aid	...	...	...
Total non-federal	$93.2	$1,830.0	+4
Federal appropriations:			
In U. S.............	...	...	...
Outside U. S.........	...	...	...
Total new capital........	$93.2	$1,830.0	+4

ENR cost and volume indexes, 1955

		Base years = 100 1913	1926	1949
Construction cost ...	3/31†	647.49	311.25	135.74
	3/3†	645.70	310.39	135.36
Building cost	3/31†	460.62	249.00	130.94
	3/3†	459.63	248.46	130.65
Volume	Mar.	691	281	200
	Feb.	459	187	133

† Official monthly indexes for Apr. & Mar.

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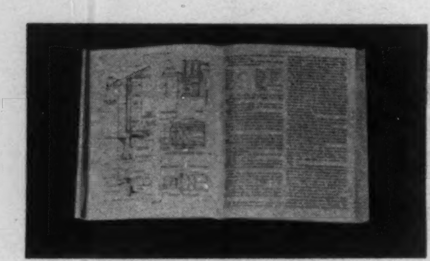

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Clear, concise manual covers common types of roofs, and how to lay out all types of rafters required in them. Eliminates complicated mathematics. Gives short-cut methods made possible by the steel square—explains its use, describes the rafter tables, and shows how to use the square in stair work. **By J. Douglas Wilson, Supt., Trade and Ind. Ed., Los Angeles City Schools, and S. O. Werner, Assoc. Prof. of Ind. Ed., Univ. of Calif. 2nd Ed. 160 pp., 133 illus., $3.25**

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Concise handbook discusses every detail of small residence and frame house construction, giving instructions and diagrams for each operation. Covers methods that meet FHA requirements. Gives best practices for framing, bracing, roofing, etc., and advantages of each method. Second Edition covers construction of picture windows, plywood interiors, flat-type roofs, and other modern home features. **By E. A. Lair, Instructor, Building Trades. 2nd Ed., 310 pp., 26 illus. $4.75**

HOUSE CONSTRUCTION COSTS

Gives you quick, accurate methods for estimating the exact unit costs of building a house in any price range, location, or size. Covers everything from digging the foundation to hanging the last roll of wallpaper. Provides cost data on earthwork, masonry, carpentry, plastering, plumbing, etc. **By G. Underwood, Builder. 302 pp., 63 illus., $6.00**

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LABOR

Prevailing-Wage Proposals

Billions of dollars of additional construction is the target of demands for major over-haul of wage-hour legislation

Last week the chances looked slim for serious congressional consideration during the current session of changes sought by the AFL in wage and hour laws applicable to federal construction. Despite the backing of the Building Trades Department (ENR Mar. 17, p. 25), neither of the bills that were introduced has come up for committee hearings and Congress shows little disposition to tackle these far-reaching proposals.

The identical bills, HR. 4566 and S. 1285, were introduced by Rep. John E. Fogarty of Rhode Island and Sen. Earl Clements of Kentucky—both members of their respective Labor Committees. Although referred to as amendments to the Davis-Bacon Act, the proposals go far beyond any single piece of existing legislation and affect the whole vast, interlocking network of federal wage and hour laws relating to construction.

Basic aims of the proposals are extended application of the prevailing wage, a new formula for wage determinations, more rigid overtime pay requirements, and substantial changes in enforcement procedures.

• Present structure—wages—Capstone of the existing minimum wage network applicable to construction is the Davis-Bacon Act, a remedial piece of legislation enacted in 1931. Limited in scope, it indirectly requires "contractors and subcontractors" to pay "minimum wages" to "laborers and mechanics" employed on "construction, alteration, and/or repair, including painting and decorating, of public buildings or public works" where the contract exceeds $2,000 and the United States or District of Columbia is a party.

Covered workers must be "employed directly on the site." Minimum wages are defined as those determined by the Secretary of Labor as "prevailing." Any provisions to the contrary in union contracts are made ineffective.

The law was later supplemented by the performance and payment bond provisions of the Miller (Heard) Act and by the criminal penalties imposed by the broader Copeland Anti-kickback Act for attempting to induce employes to accept less than the wage to which they are entitled.

Subsequent legislation has extended the narrow prevailing-wage coverage of the Davis-Bacon Act to a multiplicity of construction in which the federal government is merely a financial assistant through grants, loans or guarantees. These statutes include the National Housing Act (FHA), Hospital Survey and Construction Act, Federal Airport Act, Housing Act of 1949, School Survey and Construction Act, and Defense Housing and Community Facilities and Services Act of 1951.

• Hours—Overtime pay requirements are found, not in prevailing-wage legislation, but in the following complementary statutes:

• The Eight Hour Law, which places a limitation of eight hours on the working day of "laborers and mechanics" employed by contractors and subcontractors on a federal "public work," including river or harbor dredging or rock excavation, unless hours in excess of eight are paid at time and a half. By administrative regulation the law's application has been extended to federally financed construction.

• Fair Labor Standards Act, which requires payment at time and a half for hours in excess of 40 in any work week on the repair, enlargement or reconstruction of buildings or "instru-

CIO Convention Highlights

At its hard-hitting and historic convention in Cleveland last week, the CIO reelected Walter Reuther as president and cleared the decks for vigorous drives to improve the strength and welfare of organized labor.

The guaranteed annual wage proposal, about to be dumped into the lap of the automotive industry, received the convention's approval.

A strike fund of $25 million was authorized to give teeth to union demands, and dues were hiked from $2.50 to $7.50 to hasten the fund's accumulation.

Merger of the AFL-CIO, as outlined in the Feb. 9 Miami agreement, was approved.

An organization drive on a united labor front was set in motion by authorization of a $1.5-million contribution to a joint fund to which the AFL will presumably contribute on a proportionate basis.

mentalities" of "interstate commerce." Employer contributions to welfare plans are not considered part of the "regular rate" for overtime pay computations.

- **Enforcement**—Under existing legislation, determination of prevailing wages is the responsibility of the Secretary of Labor. The responsibility for investigation and enforcement is divided between him and the agency sponsoring the construction.

- **Proposed amendments**—The changes called for in the bills now before Congress are these:
  - Extension of prevailing-wage coverage to all construction projects involving federal loans, grants, insurance guarantees and lease-purchases. Caught in the wide orbit would be billions of dollars worth of additional construction including FHA single family and VA guaranteed homes, rural electrification programs and the proposed federal highway program.
  - Broadening of the prevailing-wage determination to include such union-negotiated cash payments as those for travel time, subsistence allowances and vacation pay, plus the amounts contributed by contractors for health and welfare plans.
  - Tightening up of overtime pay requirements, making time and a half mandatory for all hours in excess of eight a day, all hours in excess of 40 a week, all work in excess of five consecutive working days, and all Saturday, Sunday and legal holiday work.
  - Delegation of complete enforcement authority to the Secretary of Labor.

So far, no counter-proposals have been made, but the AGC is considering sponsorship of an amendment permitting judicial review of wage determinations.

Labor Briefs . .

- **"No" from AGC**—The AGC in Phoenix, Ariz., has refused to negotiate separately with the ironworkers, one of the six AFL building trades whose five-year contract expires May 31 (ENR Feb. 17, p. 243). Determined to resist the demands for wage increases, the AGC contends the six crafts represent an historical bargaining unit.

- **Joppa again**—A federal court upheld the International Association of Ironworkers' expulsion of W. B. Sanders as a union official but permits him to remain a member. A former business agent of Local 595 and a labor storm center at Joppa, Ill., Sanders was expelled in 1953 (ENR Dec. 17, 1953, p. 28).

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OFFICIAL PROPOSALS

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CLOSING DATE: **Friday 10:30 A.M. for issue dated the following Thursday.**

SEND COPY TO: **Official Proposal Division,**
Engineering News-Record
330 West 42nd Street
New York 36, N. Y.

Bids: April 19, 1955

Demolition of a Steel Highway Bridge

Delaware River Joint Toll Bridge Commission

Administration Building, Morrisville, Pa.
Notice to Contractors

Sealed proposals for "Demolition" of a steel highway bridge supported by stone masonry piers over the Delaware River between Pa. and N. J. located as follows:

Contract No. 209—Delaware—Upper Mount Bethel bridge between Delaware, Warren County, N. J. and Upper Mount Bethel township, Northampton County, Pa., approximately two miles downstream from the recently completed highway bridge between Portland, Pa. and Columbia, N. J.

Will be received by the Delaware River Joint Toll Bridge Commission at its office, Administration Building, Morrisville, Pa. until 11:00 (11 A.M.) Eastern Standard Time on the 19th day of April 1955, at which time and place all bids will be publicly opened and read aloud.

"Demolition" of bridge includes the following work:

1. Demolition and disposal of the five (5) spands of superstructure including steel trusses, steel bracing, steel floor system, Amiesite wearing surface, concrete deck, railings, and incidentals.

Structural steel 750 plus or minus tons. Concrete deck 315 plus or minus C. Y. Amiesite wearing surface 25 plus or minus C. Y. Timber shoring 15 plus or minus M. B. M.

2. Demolition and disposal of the four (4) piers and the riprap around them, down to the elevation of the surrounding river bottom. Substructure—stone masonry, grouted. Riprap, and loose stone timber cribbing, and so forth (4 piers) 6,300 plus or minus C. Y.

All materials removed shall become the property of the contractor and are to be disposed of as required.

After April 4th, 1955, instructions to bidders, form of proposal, form of contract, form of performance bond, plans and specifications may be examined at the offices of the commission, Morrisville, Pa. or Administration Building, Phillipsburgh, N. J., and copies thereof obtained upon payment of Five dollars ($5.00) for each set which amount is not returnable.

The proposal must be accompanied by a certified check in the amount of not less than five (5) percent of the amount of the proposal.

All checks should be made payable to the Delaware River Joint Toll Bridge Commission, which amounts shall be forfeited as liquidated damages if the bidder or bidders fail, within ten (10) consecutive calendar days after written notice that the bidder or bidders have been awarded the contract, to enter into a written contract with the Commission in accordance with the accepted bid, and to give a performance bond satisfactory to the Commission equal to one-hundred (100) percent of the amount of the contract.

The Commission reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work, and to the bidder whose proposal is deemed by the Commission to be the most advantageous.

Delaware River Joint Toll Bridge Commission by Alexander R. Miller, Chairman of Commission

Dated: April 4, 1955

Bids: April 25, 1955

Spring Valley Water Works

INVITATION TO BIDDERS

Notice is hereby given that sealed bids will be received by the Spring Valley Water Works and Supply Company at their office in Spring Valley, New York, until two o'clock P.M. Eastern Standard Time on the twenty-fifth day of April, 1955 for furnishing materials and performing the labor for clearing lands to be flooded by the deForest Reservoir in Rockland County, New York, involving about 1,062 acres.

The Instructions to Bidders, Specifications, Proposal, Contract and Bond, and Plans may be examined at said office or at the office of the Consulting Engineers, Buck, Seifert and Jost, 112 East 19th Street, New York City, and copies thereof obtained upon payment of Five ($5.00) Dollars for each set. Any bidder, upon returning such set or sets within twenty (20) days after the date on which bids are received, will be refunded his payment.

Each proposal must be accompanied by a certified check or bid bond from a reliable surety company in an amount equal to ten (10%) percent of the proposal. The certified check will be retained to pay for any damage or loss to the Owner, or the liability bond will accrue in case the successful bidder shall neglect or refuse to enter into a contract in accordance with his proposal. Acceptance of the bid will be contingent upon the fulfillment of this requirement by each bidder.

The Spring Valley Water Works and Supply Company reserves the right to consider bids for ten (10) days after their receipt before awarding any contract and the right is reserved to accept any bid or to reject any or all of them.

SPRING VALLEY WATER WORKS
AND SUPPLY COMPANY
By George H. Buck, President
Buck, Seifert and Jost
Consulting Engineers

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Official Proposal Division
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U. S. Government

INVITATION FOR BIDS (CONSTRUCTION CONTRACT). DATE, April 6, 1955. NAME AND LOCATION OF PROJECT: Project No. 6 on St. Thomas, Virgin Islands. As noted herein for Roadway. DEPARTMENT OR AGENCY, Government of the Virgin Islands. BY (Issuing office) Public Works Commissioner, Government of the Virgin Islands, Charlotte Amalie, St. Thomas, Virgin Islands. Sealed bids in single copy for furnishing all labor, equipment, and materials and performing all work for the project described herein will be received until 3:00 p.m., Atlantic Standard Time, May 18, 1955, in the office of the Public Works Commissioner, Charlotte Amalie, St. Thomas, Virgin Islands, and then publicly opened. Information regarding bidding material, bid guarantee, and bonds, plans and specifications and other contract documents are open for public inspection at the office of the Public Works Commissioner, Charlotte Amalie, St. Thomas, Virgin Islands; R. L. Kenan & Associates, Bell Building, Montgomery, Alabama; A.G.C. Office, 1113 Congress Building, Miami, Florida; Builders Exchange, 46 Northeast 6th Street, Miami, Florida; Urban Renewal Administration, 2nd Floor, del Valte Building, Santurce 17, Puerto Rico; and F. W. Dodge Corp., 119 West 40th Street, New York 18, N. Y. Plans and specifications may be procured from the office of R. L. Kenan & Associates at the Bell Building, Montgomery, Alabama, upon deposit of the following: Proposed Waterfront Roadway, $20.00. Deposit shall be only by certified check payable to R. L. Kenan & Associates which will be refunded to bona fide bidders upon the return of plans and specifications in good condition within forty-five (45) calendar days from the date of bid opening. A bona fide bidder includes any person who submits a bid for a general contract, but does not include a person who submits a quotation to the general contract bidders. To persons who procure plans and specifications upon payment of the above stated amount and who do not submit a bid, seventy-five (75) per cent of the deposit amount will be refunded upon the return thereof in good condition within forty-five (45) calendar days from the date of bid opening. No refund will be made for return after that time. After the bid opening additional copies of plans and specifications may be obtained from R. L. Kenan & Associates, at commercial rates, plus handling and mailing charges. Bonds, etc. Each bid must be accompanied by a satisfactory bid guaranty in an amount not less than 5 per cent of the total bid. The successful bidder will be required to furnish a performance bond and payment bond, each in the amount of 100 per cent of the contract price. No bid may be withdrawn until thirty (30) calendar days after the scheduled closing time for the receipt of bids. The Government of the Virgin Islands reserves the right to award a contract for any or all items of any bid, whichever course is in the best interests of the Government of the Virgin Islands. Description of work: The construction of a roadway approximately 7,830 feet long along the seawall in Charlotte Amalie Harbor which includes: 13,500 C. Y. Common Excavation, 4,700 C. Y. Solid Rock Excavation, 1,434 L. F. Culvert Pipe, 38 Ea. Roadway Inlets, 12,900 L. F. Standard Combination Curb and Gutter, 280 C. Y. Rubble Masonry Curb Wall, 2,460 S. Y. Grouted Riprap, 6,330 S. Y. Concrete Sidewalk, 25,700 S. Y. Dry Macadam Base Course, 25,700 S. Y. 2 inch Bituminous Surface, 4 Ea. Comfort Stations (toilets), Roadway Lighting System. With Alternates: 25,700 S. Y. Stabilizing Subgrade, 25,700 S. Y. Concrete Paving.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4392) will be received at Casper, Wyoming, until May 10, 1955, for furnishing labor and materials for furnishing and erecting four double-circuit steel towers for the Alcova-Gering 115-kv transmission line, Casper-Glendo Section, Transmission division, Missouri River Basin Project, Wyoming-Nebraska. Location near Casper, Wyoming. Principal items are constructing tower footings; furnishing and erecting steel towers; and other work. Completion time 180 days. For particulars, address Bureau of Reclamation, Casper, Wyoming; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: May 3, 1955

Filter Plant Improvements

OFFICE OF THE CITY CLERK
CITY HALL
PLATTSBURGH, NEW YORK
NOTICE TO CONTRACTORS

NOTICE is hereby given that sealed bids or proposals for the construction of FILTER PLANT IMPROVEMENTS will be received by the City of Plattsburgh, Clinton County, New York, at the office of the City Clerk until 2:00 o'clock P. M., Eastern Daylight Saving Time on the 3rd day of May, 1955, at which time they will be publicly opened and read aloud. Proposal must be enclosed in a sealed envelope, addressed to the City Clerk, City Hall, Plattsburgh, New York, and have plainly marked thereon in bold letters "Proposal for Filter Plant Improvements."

The work to be performed comprises structural alterations and additions to an existing rapid sand gravity filter plant to increase its rated capacity from approximately 4 M.G.D., to 6 M.G.D., including:—Structural alterations and additions to the existing filters and settling basins; construction of an extension to the existing filter building; construction of an additional settling basin; the furnishing and installing of new flocculation and filter plant mechanical equipment; the making of piping alterations and additions; furnishing and installing two Venturi meters in existing supply lines; plumbing, heating and electrical work; together with miscellaneous appurtenant work as required.

Plans and specifications may be examined at the office of the City Clerk, in Plattsburgh, or at the office of the Consulting Engineer, Benjamin L. Smith & Associates, 11 North Pearl Street, Albany, New York, and copies thereof may be obtained upon payment of $20.00 for each set.

Proposals must be submitted on the blank forms provided and in the manner designated therein. Each proposal must be accompanied by a certified check or a bid bond in an amount not less than 5% of the total amount of the bid. The successful bidder will be required to furnish a bond of indemnity in the full amount of his bid, for the full and faithful performance of his work and the payment of all labor and materialmen.

The contract must be completed in its entirety within 200 calendar days of the notification to the Contractor to proceed with the work.

The City of Plattsburgh reserves the right to consider all bids for a period of forty-five (45) days after the opening thereof, before awarding any contract and the right is reserved to waive any informalities in, to reject any or all bids, and to select the bid, the acceptance of which will, in its judgment, best secure the efficient performance of the work.

CITY OF PLATTSBURGH, NEW YORK
(Sgd) George E. Miller
City Clerk

APPROVED:
(Sgd) John J. Tyrell
Mayor
(Sgd) Allen M. Light
Corporation Counsel

Bids: May 24, 1955

Fort Pierce Port Authority

The Board of Commissioners of the Fort Pierce Port Authority requires the services of an engineering firm with special experience and qualifications to carry out the following work, looking toward the reactivation of an existing port facility:

1. Complete economic study, including traffic, rates, earnings, area benefits, and development of resources existing and projected.
2. Physical facilities existing and projected.
3. A recommended development plan, in stages, to reactivate port on a self-liquidating basis.

It is requested that interested engineering firms, whose normal practice has included similar economic development studies for other ports, submit brochures of their qualifications and record of performance in accordance with established codes of ethics of the recognized engineering societies. It is requested that such brochures be received by the Fort Pierce Port Authority not later than May 24, 1955.

Harry J. Kicliter, Chairman
Fort Pierce Port Authority
Drawer 111
Fort Pierce, Florida

OFFICIAL PROPOSALS

Bids: April 26, 1955

Power Authority of the State of New York

ST. LAWRENCE POWER PROJECT

ADVERTISEMENT FOR PROPOSALS
FOR
THE FURNISHING AND DELIVERY OF
GENERATOR MAIN LEADS—ISOLATED
PHASE BUS

SPECIFICATIONS NO. PA-4-14006
ST. LAWRENCE CONTRACT NO. P8

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the design, manufacture, and furnishing of 4 – Sets of isolated phase bus for service on 13.8 KV system and delivery thereof f. o. b. destination, until 10:30 A.M. Eastern Standard Time on the 26th day of April, 1955, at the Authority's office, 270 Broadway, Hearing Room C on the 6th floor, New York 7, New York, at which time and place proposals will be publicly opened and read aloud.

Each set of isolated phase bus shall consist of the buses, enclosures, supporting steel, disconnecting switches, current transformers, potential transformers, surge protection equipment and appurtenances for connecting a group of four (4) generators to a bank of three (3) single phase transformers. Delivery of the four sets will be required at six month intervals starting with delivery of the first set on or before September 1, 1957. Bids will be entertained only for all four sets of buses and associated equipment and services in accordance with the bidding schedule. Erection at the site of installation will be done by others but services of an erection engineer shall be provided by the manufacturer if and when required.

Plans, specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and the Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, and may be inspected by prospective bidders during office hours.

Plans, specifications and Proposal Forms may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York upon application and prepayment of a fee of Ten ($10.00) dollars per initial set of contract documents and Five ($5.00) dollars per set for additional sets, no part of which will be refunded. Two sets must be returned with each bid.

Bids must be made in duplicate upon the proposal forms included in and bound with the Contract Documents. A bid deposit will be required with each bid in an amount not less than 10 percent of the gross sum bid.

The Right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

3/23/55

COMMONWEALTH OF MASSACHUSETTS. Department of Public Works. NOTICE TO CONTRACTORS: Sealed proposals for Furnishing and Delivering Structural Steel for the John F. Fitzgerald Expressway Tunnel in the City of BOSTON will be received at Room 427, 100 Nashua Street, Boston, Mass., until 2:00 P.M. of Tuesday, April 26, 1955, and at that place and time publicly opened and read. Proposal guaranty: $100,000. Charge for plans and proposal forms: $15.00, amount returnable only to bidders. Complete information at said office; plans on display at District offices. Minimum wage and dump-truck rates have been established. Right reserved to waive any informality in or reject any or all proposals. An award will not be made to a Contractor who is not equipped to undertake and complete the work. By: JOHN A. VOLPE, Commissioner of Public Works. March 26, 1955.

Read the Official
Proposal Columns of
ENGINEERING NEWS-RECORD
This Week and Every Week

OFFICIAL PROPOSALS

Bids: April 14, 1955

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on the 14th day of April 1955, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposits	Estimated Cost of Work
DISTRICT No. 8, J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
Rockland	H. T. 55-2P	New York State Thruway—Hudson Section—Sub. 8 (Suffern-Nyack Pts. 1 & 2)	7.70	9" Cem. Conc. Pavt. 2 @ 12' Wide=7.05 Mi. Misc. Work=0.65 Mi.	$53,000 Plans $10	$966,000
Rockland	H. T. 55-3P	New York State Thruway—Hudson Section—Sub. 8 (Suffern-Nyack Pt. 3)	4.52	9" Cem. Conc. Pavt. 2 @ 12' Wide=4.47 Mi. Misc. Work=0.05 Mi.	$30,000 Plans $10	568,000
Ulster	P. S. C. 4781	City of Kingston: Broadway and N.Y.C. R.R.	....	Alteration and Additions to Existing Drainage System,	$1,500 Plans $10	28,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

The right is reserved to reject any or all bids.

John W. Johnson
SUPT. OF PUBLIC WORKS

Bids: May 19, 1955

Territory of Hawaii
Territorial Highway Department
Honolulu, T. H.

NOTICE TO BIDDERS

SEALED PROPOSALS for the construction of Pali Road (Tunnel Section), Federal Aid Secondary Project No. S 216(5), Districts of Honolulu and Koolaupoko, Island of Oahu, Territory of Hawaii, will be received at the office of the Territorial Highway Engineer, Honolulu, T. H., until 2:00 o'clock p.m., Thursday, May 19, 1955, at which time and place they will be publicly opened and read. The right is reserved to reject any and all proposals and to accept the one best suited to the interests of the Territory.

The principal items of work involved in the construction of two reinforced concrete lined vehicular tunnels of 1000 lin. ft. and 500 lin. ft. respectively, and bridges and grading, drainage and paving of 0.46 mile of roadway include:

186,000	cubic yards	Roadway Excavation
12,810	cubic yards	Class A-1 Concrete
789,000	pounds	Bar Reinforcing Steel
45,000	cubic yards	Tunnel Excavation
900,000	pounds	Structural Steel Ribs

Copies of plans, specifications, special provisions, and subsurface investigation reports are on file and open to public inspection at the office of the Territorial Highway Engineer located at Territorial Office Building, Honolulu, T. H., and also at the office of Division Engineer, Division 7, Bureau of Public Roads at the Old Mint Building, Fifth and Mission Streets, San Francisco, on and after March 24, 1955. Plans, specifications and blank forms of proposal will be available for mailing from the Territorial Highway Department to prospective bidders upon the deposit of Fifty Dollars ($50.00) plus air express charges. Copies of subsurface investigation reports may be purchased from the Territorial Highway Department for the sum of Forty Dollars ($40.00) for each set. Deposit of Fifty Dollars ($50.00) will be refunded when plans are returned.

Remittances are payable by certified check or postal money order to the Territorial Highway Engineer and must accompany requests for plans, specifications and contract documents.

Each prospective bidder must file a "Standard Questionnaire and Financial Statement for Bidders" on the amended forms provided by the Territorial Highway Department at least thirty (30) days prior to the time advertised for the opening of bids.

After questionnaire has been reviewed and checked, the prospective bidder will be notified as to whether or not he is prequalified to submit a bid.

BEN E. NUTTER
Territorial Highway Engineer

Bids: May 3, 1955

Furnishing and Erecting Spillway Gates

NOTICE TO BIDDERS

Sealed proposals for furnishing and erecting spillway gates for the Boonton Dam will be received by the Board of Commissioners in the Assembly Chamber of the City Hall, Jersey City, N. J., at 10:30 AM. (DST) on May 3rd 1955, at which place and time they will be publicly opened and read.

The work consists of the furnishing and erection of approximately 300 feet of Bascule Type Gates across the Spillway of the Boonton Dam with appurtenances, operating mechanism and buildings. The dam is located on the Rockaway River on the southerly outskirts of the Town of Boonton and is owned by the City of Jersey City.

Separate proposals will be received on the three divisions of the work as follows:

Contract A.	Bascule Type Gates for Boonton Dam.
Contract B.	Structural Steel Suspension Walk.
Contract C.	Electrical Work.

Each bid must be accompanied by a certified check in the amount of five (5%) percent of the bid, and in addition a Surety Consent, all in accordance with the Instructions to Bidders.

Bidders shall be required to furnish a bond upon the execution of the contract, bond to be bond of a surety company authorized to do business in the State of New Jersey, in an amount equal to the full amount of the contract.

Copies of plans, proposal forms, specifications and forms of bond and contract can be seen at the office of Clyde Potts Associates, Consulting Engineers, 30 Church Street, New York City, or may be obtained by prospective bidders upon depositing Twenty Dollars ($20), which sum will be refunded to Contractors who submit bids, on return of the specifications within ten (10) days after the contract has been awarded, if same are in good condition when returned.

The Board of Commissioners reserve the right to reject any and all proposals.

James A. Tumulty, Jr.
City Clerk

Dated March 15th 1955

U. S. Government

INVITATION FOR BIDS (CONSTRUCTION CONTRACT). DATE, April 6, 1955. NAME AND LOCATION OF PROJECT, Project No. 21 on St. Croix, Virgin Islands. As noted herein for each school. DEPARTMENT OR AGENCY, Government of the Virgin Islands. BY (Issuing office) Public Works Commission, Government of the Virgin Islands, Charlotte Amalie, St. Thomas, Virgin Islands. Sealed bids in single copy for furnishing all labor, equipment, and materials and performing all work for the project described herein will be received until 3:00 p.m., Atlantic Standard Time in the office of the Public Works Commissioner, Charlotte Amalie, St. Thomas, Virgin Islands, and then publicly opened. Information regarding bidding material, bid guarantee, and bonds, plans and specifications and other contract documents are open for public inspection at the office of the Public Works Commissioner, Charlotte Amalie, St. Thomas, Virgin Islands; M. A. Dyer Company, 24 School Street, Boston, Massachusetts; A.G.C. Office, 1113 Congress Building, Miami, Florida; Builders Exchange, 46 Northeast 6th Street, Miami, Florida; Urban Renewal Administration, 2nd Floor, del Valte Building, Santurce 17, Puerto Rico; and F. W. Dodge Corp., 119 West 40th Street, New York 18, N. Y. Plans and specifications may be procured from the office of M. A. Dyer Company (Architects-Engineers) at 24 School Street, Boston, Massachusetts, upon deposit of the following: Frederiksted Elementary Junior High School, $50,00; Kings Hill Elementary School, $50.00; Both Schools together, $75.00. Deposit shall be only by certified check payable to M. A. Dyer Company which will be refunded to bona fide bidders upon the return of plans and specifications in good condition within forty-five (45) calendar days from the date of bid opening. A bona fide bidder includes any person who submits a bid for a general contract, but does not include a person who submits a quotation to the general contract bidders. To persons who procure plans and specifications upon payment of the above stated amounts and who do not submit a bid, seventy-five (75) per cent of the deposit amount will be refunded upon the return thereof in good condition within forty-five (45) calendar days from the date of bid opening. No refund will be made for return after that time. After the bid opening additional copies of plans and specifications may be obtained from the Architect-Engineer at commercial rates, plus handling and mailing charges. Bonds, etc. Each bid must be accompanied by a satisfactory bid guaranty in an amount not less than 5 per cent of the total bid. The successful bidder will be required to furnish a performance bond and payment bond, each in the amount of 100 per cent of the contract price. No bid may be withdrawn until thirty (30) calendar days after the scheduled closing time for the receipt of bids. The Government of the Virgin Islands reserves the right to award a contract for any one or both schools on the basis of the basic bid for each school or any combination of schools and/or sections or by the acceptance of any or all of the alternates, whichever course is in the best interests of the Government of the Virgin Islands. Description of work. The construction includes: St. Croix, Virgin Islands, Project No. 21—1. Frederiksted Elementary Junior High School. 2. Kings Hill Elementary School.

CLASSIFIED **SEARCHLIGHT SECTION** ADVERTISING

EMPLOYMENT • BUSINESS • **OPPORTUNITIES** • EQUIPMENT—USED or RESALE

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$1.80 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

POSITION WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

PROPOSALS, $1.80 a line an insertion.

INFORMATION:

BOX NUMBERS count as 1 line additional in undisplayed ads.

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EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:

The advertising rate is $20.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

Send NEW ADVERTISEMENTS: To New York Office, 330 W. 42nd St., N. Y. for April 21st issue closing April 11th.

ENGINEER - CONSTRUCTION

Experienced in design, estimating, job management & field supervision of industrial buildings. Permanent position Vicinity Newark, N. J. C.E. degree required. Send complete resume of education, experience & salary requirements.

P-6107, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED: STRUCTURAL steel detailers. Please state experience and salary desired with complete resume. Berger Steel Company, Inc., Lafayette, Ind.

ESTIMATOR AND field superintendent for sewer construction. Midwest, salary and percentage of profits. Give resume of experience and salary expected in first letter. P-5982, Engineering News-Record.

WANTED: ENGINEER estimator by Midwest Construction Company doing highway, airbase, asphalt and concrete paving & utility work. Prefer man between 25 and 45. Have good opportunity for right man. Give full particulars. P-5978, Engineering News-Record.

PITTSBURGH STEEL Warehouser has opening for man experienced in pricing and selling hot and cold rolled sheets; experience in shear line operation, shearing blanks, etc. a must. P-5810, Engineering News-Record.

YOUNG OFFICE engineer to handle details, drafting, estimating, etc. for smaller Ohio contractor. Submit resume and salary desired. P-5873, Engineering News-Record.

ENGINEERS, DESIGNERS, engineering draftsmen for established consulting firm designing sewers, pumping stations, sewage treatment plants, water supply systems, etc. Structural and hydraulic design, hydraulic computations, specifications. Location, New York State. Give full particulars. Our employees know of this advertisement. P-5856, Engineering News-Record.

ROAD, BRIDGE general supt. required for multi-million dollar project, Eastern U. S. Excellent opportunity for right man. Please submit educational background, experience, references, salary desired. P-5887, Engineering News-Record.

WANTED—CITY and Regional Planning Engineer for community of 30,000 with strong support for planning, at about $6,000 and opportunity for advancement in the executive branch of the city government, to begin July 1, 1955. Please give full background. Address City Manager, Ponco City, Oklahoma.

IMMEDIATE VACANCIES—Highway Const. Insp. $382; Instrumentmen $347; Map Draftsman $347; Sr. Engr. Aides $316. Subs. allow. $60 p/m and up. Appt. by Civil Service Exam. Inquire State Personnel Dept., Carson City, Nev.

ESTIMATOR EXPERIENCED in building construction for New Jersey-New York General Contractor. Write stating previous experience, education, availability, salary. P-6049, Engineering News-Record.

Dealer Inquiries Invited **NOW**

Fast, easy way to
CUT WIRE ROPE
Low cost, portable, safe
For details mail ad to

MONTGOMERY MFG. CO.
24 M Austin St., Newark 5, N. J.

SALARIED POSITIONS $5,000 — $35,000

We offer the original personal employment service (established 45 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars.

R. W. BIXBY, Inc.
659 Brisbane Bldg. Buffalo 3, N. Y.

POSITIONS VACANT

GUNITE ENGINEER for estimating and project coordination as assistant to President of Nationally known Gunite Company, Philadelphia area. P-6085, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT, with extensive experience in all types of drainage and heavy watermain installations, for work in New York State. Permanent position for qualified applicant. P-6073, Engineering News-Record.

ESTIMATOR, FOR firm doing extensive sewer, watermain, treatment plant, heavy construction. Must be graduate engineer or have extensive engineering background, with ability to obtain price and job information. Permanent position for qualified applicant. P-6074, Engineering News-Record.

YOUNG AGGRESSIVE engineer with field experience in asphaltic concrete and Portland cement concrete paving, for estimating, extensive travel, remuneration commensurate with experience & ability. P-6109, Engineering News-Record.

WATER WORKS Sup't-Operator for growing Eastern Penna. Municipal Water Co. Under 40 years, practical and/or educational experience required. Excellent opportunity; security for the right man. Give full details. Write P-6110, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

EMPLOYMENT SERVICE

SALARIED PERSONNEL, $3,000-$25,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

POSITIONS WANTED

NEW YORK client contact—registered architect will represent non-metropolitan architects or engineers as client or consultant contact. Diversified domestic and foreign experience. PW-5858, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT, for Nike Rocket Sites. Just completed first site in country, for actual operation. Supervised all work, purchased all materials. Have connections to purchase approved government material, at minimum prices. Fifteen years experience; can supply references. Ready for immediate employment. Willing to travel. PW-5881, Engineering News-Record.

CONSTRUCTION MANAGER desires to manage general contractor's branch office with full responsibility, corresponding authority. Age 39, twenty years experience through ranks. Understand estimating, pricing, costs, contracts, personnel and labor relations, field and office administration. Require $12,000.00 annually. Will sign contract. Available thirty days notice. PW-6004, Engineering News-Record.

CONSTRUCTION ENGR.—BSCE, age 28, married 3 yrs experience heavy construction; highway, bridges, and field survey. Desires position with contractor on foreign project. PW-6028, Engineering News-Record.

SUPT., ESTIMATOR, wishes to affiliate with medium size highway or utility contractor. Capable, cost conscious. PW-6056, Engineering News-Record.

(Continued on page 125)

DESIGN ENGINEERS

Permanent Openings Available at Our Cleveland, Ohio Offices for qualified DESIGNERS experienced in:

. . . . STRUCTURAL STEEL
. . . . REINFORCED CONCRETE
. . . . PRESSURE VESSEL
. . . . PROCESS PIPING
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. . . . EQUIPMENT SPECIFICATIONS
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. . . . HEAVY MACHINES
- - - - Top Hourly Rates
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- - - - Moving Expense Allowance

WRITE—giving complete details of experience, education, age, etc.—to:

E. A. Kolner,

ARTHUR G. McKEE & COMPANY
2300 Chester Ave. Cleveland 1, Ohio

EXPERIENCED HYDRAULICS ENGINEER WANTED

Graduate engineer experienced in paper mill hydraulics, planning and development of piping layout systems, etc. for large expanding and progressive mill in Maryland. Good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

OVERSEAS EMPLOYMENT

Guam Project

ASSISTANT CHIEF ENGINEER

Experienced on large industrial type buildings and related utility projects. Graduate Engineer with at least 10 years' experience required.

ENGINEERS

Technical and Narrative Reports
Electrical Design
Architectural and Structural Design
Mechanical Design

Write, giving detailed account of experience, education, etc.

BROWN-PACIFIC-MAXON
"Guam" Contract NOy-13931
P.O. Box 3316, Rincon Annex
San Francisco "19"—Calif.

WANTED Steel Sheet Piling Distributors

Steel salesmen or equipment distributors to handle as side line on commission basis rental and sale steel sheet piling in following territories: 1. Maine-N.H., 2. Western N.Y., 3. Virginia, 4. N.C., 5. S.C., 6. No. Ga., 7. Vt., & N.E., N.Y., 8. E. Tenn. & W.Va., 9. Cleveland, 10. Detroit, 11. Birmingham, Ala., 12. Cincinnati.

P-6066, Engineering News-Record
330 W. 42nd St., New York 36, N. Y.

MECHANICAL ENGINEER

Graduate Mechanical Engineer experienced in the operation of Fourdrinier paper machines, refining and related equipment for large expanding and progressive mill in Middle Atlantic States. Under 35 years of age. Good salary and excellent opportunity for advancement. Give detailed resume of experience. Send resume to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

THE AUSTIN COMPANY

Offers Opportunities to Qualified Engineers and Draftsmen

Positions are open to capable engineers and draftsmen who can design and/or prepare plans and specifications for complete industrial plants, all related structures, and building equipment falling within the following categories:

DESIGNERS—Office buildings, laboratories, and industrial buildings. Positions require those possessing vision and creativeness.

STRUCTURAL—Industrial buildings and miscellaneous structures of steel and reinforced concrete.

MECHANICAL—Heating, air conditioning, ventilation systems, process piping, conveying systems, plumbing, sewer, and sprinkler systems.

ELECTRICAL — Industrial lighting and power distribution and controls.

DETAILERS—Structural steel fabrication for industrial buildings.

Assignments are in connection with our long-established offices located on the East coast and Midwest areas. Desirable working conditions, established vacation and sick leave plans, also paid holidays.

Full particulars as to education, experience, and compensation desired should be given in first letter.

NATIONAL HEADQUARTERS
16112 Euclid Ave. Cleveland 12, Ohio

HIGHWAY ENGINEERS

For office work on long-term highway design projects. Desire adequate experience or training including alignment and profile computations, interpretation of aerial photographs, geometric design of interchanges and associated work.

Employee Benefit and Retirement Plan, paid vacations and holidays, sick leave. Modern, air conditioned offices in downtown St. Louis. Please write fully to or inquire at

SVERDRUP & PARCEL ENGINEERING CO.

1625 Eye Street, N.W.
Washington 6, D. C.

1134 Locust
St. Louis 1, Mo.

SOUTH AMERICAN POSITIONS OPEN

MECHANICAL ENGINEER with several years experience in actual supervision of large shops comprising machine shops, plate and welding shops, iron, steel and brass foundries.

DESIGN DRAFTSMAN for Mechanical Department's Engineering Office.

ASSISTANT MINE FOREMAN — graduate mine engineer.

MINE LEVEL BOSS — graduate mine engineer.

ASSISTANT GENERAL SMELTER FOREMAN with good suitable technical education and all around smelter operating experience., Should have executive ability and be able to assume responsibility.

TRAINMASTER to coordinate all sections of Operating Division, including supervision of train crews, dispatchers, yard and station forces, car distribution, etc.

MAINTENANCE ENGINEER (OR MILL MASTER MECHANIC)—graduate Mechanical Engineer to take charge of all mechanical maintenance and repairs for all equipment throughout Concentrator Plant and operations. Should have good understanding of metallurgical processes and equipment.

Large Copper Company Chile, South America. 3-year contract. Transportation both ways and salary while traveling paid by Company. Good opportunities. In reply give complete details.

P-6062, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

CONCRETE PRODUCTS MEN

Men are wanted for training as supervisors and managers. Prefer men with experience in production of precast concrete products, who are willing to accept assignments in any of our plants in the U.S. or overseas. We are international manufacturers of concrete pipe, now in our 50th year.

WRITE: J. B. WELCH
Director of Industrial Relations

LOCK JOINT PIPE CO.
150 Rutledge Ave., East Orange, N. J.

ENGINEERS

Designers Detailers Draftsmen

for work on

Bridges, Expressways, Turnpikes

PERMANENT POSITIONS DEPENDING ON EXPERIENCE AND ABILITY

PAID VACATION, SICK LEAVE HOSPITALIZATION, LIFE INSURANCE

INCLUDE EDUCATION, EXPERIENCE, REFERENCES AND SALARY EXPECTED IN APPLICATION LETTER

Howard, Needles, Tammen & Bergendoff
1805 GRAND AVE. KANSAS CITY 8, MO.

DISTRICT CONSTRUCTION MANAGER

able to solicit, price, and run local process construction work for petroleum and chemical contractor on salary and incentive basis. State experience, education, age, and district in which best qualified to operate.

P-5965, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

STRUCTURAL ENGINEER

We want a capable and experienced steel man, one with sound structural engineering background, solid experience in detailing, with the ability to train detailers, and a working knowledge of shop operation. This man should be between 35 to 45 years of age and probably a man presently employed by a medium or large fabricator—who sees little opportunity of further advancement, and who has a strong desire eventually to own and operate his own business. We will consider selling a part interest of our operation with provision for increased ownership from profits. Salary $7500.00 per year. Location in Missouri River Valley.

P-6015, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ARCHITECTURAL DESIGNERS STRUCTURAL ENGINEERS and DRAFTSMEN

For long range industrial program in an established consulting office.

Must be experienced and capable of checking design drawings. Draftsmen experienced in structural steel detailing.

Send complete resume of experience.

SAMBORN, STEKETEE & ASSOCIATES
1214 CHERRY STREET
TOLEDO 4, OHIO

ENGINEERS

Foreign Service

Graduate Chemical, Mechanical, and Electrical Engineers with minimum of 5 years' experience. For specialized assignments commensurate with qualifications in various phases of project and process engineering. Write giving full particulars regarding personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 30

ARABIAN AMERICAN OIL COMPANY
505 PARK AVENUE, NEW YORK 22, N. Y.

SALES ENGINEERS

Middle Atlantic Division of large company has openings for sales engineers in Baltimore, and Trenton, New Jersey to handle promotion and sale of fabricated metal products to engineering and construction markets. Ages 24 to 30. Engineering degree necessary.

P-4753, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

HEATING & VENTILATING ENGINEER

Graduate Engineer experienced in all phases of paper mill heating and ventilating air conditioning and refrigeration for large expanding and progressive mill in Maryland. Under 35 years of age, good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

ESTIMATOR

Experienced in process equipment and piping costs for chemical plant and refinery construction. Position offers good future with progressive Penna. firm. Send resume to—

J-65, P. O. Box 3575
Phila., 22, Pa.

SANITARY ENGINEER

Opportunity available for Sanitary Engineer in an expanding pulp and paper mill located in the Middle Atlantic States. Age 25-35 years. Require man experienced in paper mill wastes, paper mill stream pollution and paper mill water purification. No other experience will be given consideration. Good salary and advancement. All replies confidential. Send resume of educational background and industrial experience to Director of Personnel

West Virginia Pulp & Paper Company
Luke, Maryland

POSITIONS WANTED

(Continued from page 123)

CONSTRUCTION EXECUTIVE, available as project manager, on large operation, chief estimator for large organization or in other executive position where scope warrants employment of top man, thoroughly experienced on all types of construction and in every phase of general contracting. PW-5956, Engineering News-Record.

COST AND Office Engineer (27) six years industrial construction wants chance to help contractor save time and money. PW-5238, Engineering News-Record.

CONTRACTORS CHIEF Engineer — age 52 wide top flight experience — 12 years heavy and 18 years bldgs—much experience competitive bidding public work. Have for many years had full responsibility of bidding & job management. Have a very successful background. PW-5655, Engineering News-Record.

ADMINISTRATIVE ENGINEER, P.E., water supply, chemical, hydroelectric and industrial plants. Structural, hydraulic mechanical and related problems. Past affiliations consulting and industrial firms. Make your job easier by making mine tougher. Available April. Will relocate. Thirty years experience at your disposal. PW-6008, Engineering News-Record.

EXPERIENCED ARCHITECTS field superintendent available on short notice. PW-5968, Engineering News-Record.

CIVIL ENGINEER, 15 years field experience, industrial and commercial buildings desires position in office of general contractor, estimating, purchasing, etc. prefer midwest location. PW-5958, Engineering News-Record.

ESTIMATOR—EXPERIENCED in all phases of competitive bidding on buildings (pricing, purchasing, etc.) to 10 million. C.E. degree, age 35, prefer Southwest. PW-5868, Engineering News-Record.

CONSTRUCTION EXECUTIVE—General superintendent mechanical equipment, processing equipment, and piping. 14 years as a Superintendent in chemical plants and refineries; 28 years experience in construction. Education M.E. Salary and bonus arrangement. PW-6108, Engineering News-Record, 520 North Michigan Ave., Chicago 11, Illinois.

CIVIL ENGINEER, M.C.E.; P.E. (Calif.). 7 years experience in hydraulics, specifications, irrigation and small construction. Prefer Western States. PW-6112, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT and engineer estimator desires permanent work in Northern New York or New England. 12 years responsible experience on major, industrial, commercial, public, bridge projects. Age 36 years. PW-6035, Engineering News-Record.

ACCOUNTANT OFFICE manager presently employed over ten years experience with large general contractor in mid-west. Would like to permanently locate in West. Experiences cover supervision of payroll, taxes, costs, purchasing, bookkeeping, profit and loss statements and correspondence. Family man, 31 years old with accounting education. PW-6034, Engineering News-Record. 68 Post Street, San Francisco, Calif.

GENERAL OR carpenter foreman 35, desires position with reliable firm in middle west. 17 years experience heavy construction, bridges, power plants, pile driving, coffer dam and railroad work. Reply PW-6057, Engineering News-Record.

LEARN ESTIMATING

Complete Building Estimators Course, also Building Labor Calculator for practicing estimators. Thirty-fourth year serving the building industry. For free trial and all particulars write:

TAMBLYN SYSTEM
1420 Gilpin St. Denver 6, Colorado

Engineers—Foremen—Office Men

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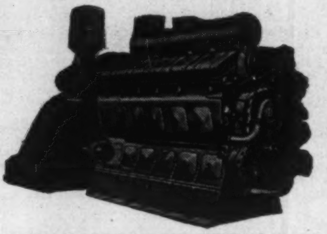

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EDITORIALS

Aiding Engineers-To-Be

The Engineers Club of Kansas City in establishing a fund to provide grants-in-aid for local young people seeking an engineering education is setting a precedent worthy of emulation elsewhere. Club-sponsored programs of this sort should be a fine supplement to scholarships and other aids that individuals and business firms are financing in their own names in increasing numbers. But the club plan has the added advantage of making it possible for small as well as large contributors to participate.

The Kansas City engineers, by setting up a student assistance committee from the club membership, have provided for continued supervision of the program and for guidance of the students themselves. One part of this guidance is to provide vacation employment in engineering, but another is to make job opportunities in Kansas City seem so attractive that the student upon graduation will choose to locate there permanently.

Many cities carry on campaigns to attract new industries. The Kansas City Engineers Club is sponsoring a much more important civic enterprise—that of attracting the engineering talent necessary to man the local industries. And it is doing it by helping to create the engineering talent in the first place.

It is difficult to conceive of a more appropriate or useful activity for an engineers club. The Kansas City Engineers Club has every right to be proud of its plan to aid tomorrow's engineers.

The Right Tools for the Job

No two subsurface jobs are exactly alike, so the methods and tools that work well on one should not be expected to do equally as well on all others. This is especially true for the handling of water in excavation below the water table, a recognized problem of subsurface work for which favorable conditions are seldom found.

The occasion for emphasizing such well known facts is afforded by a situation in southeastern Florida where a geologic formation known as oolite prevails. Oolite is a rock of cemented spherical grains of calcium carbonate, chamosite or dolomite. It generally has been conceded to be unsuitable for dewatering by wellpoints. Yet last year a successful job of wellpointing in oolite was carried out in Key West, and described in an article titled "Wellpoints Master Oolite" in ENR May 6, 1954, p.35.

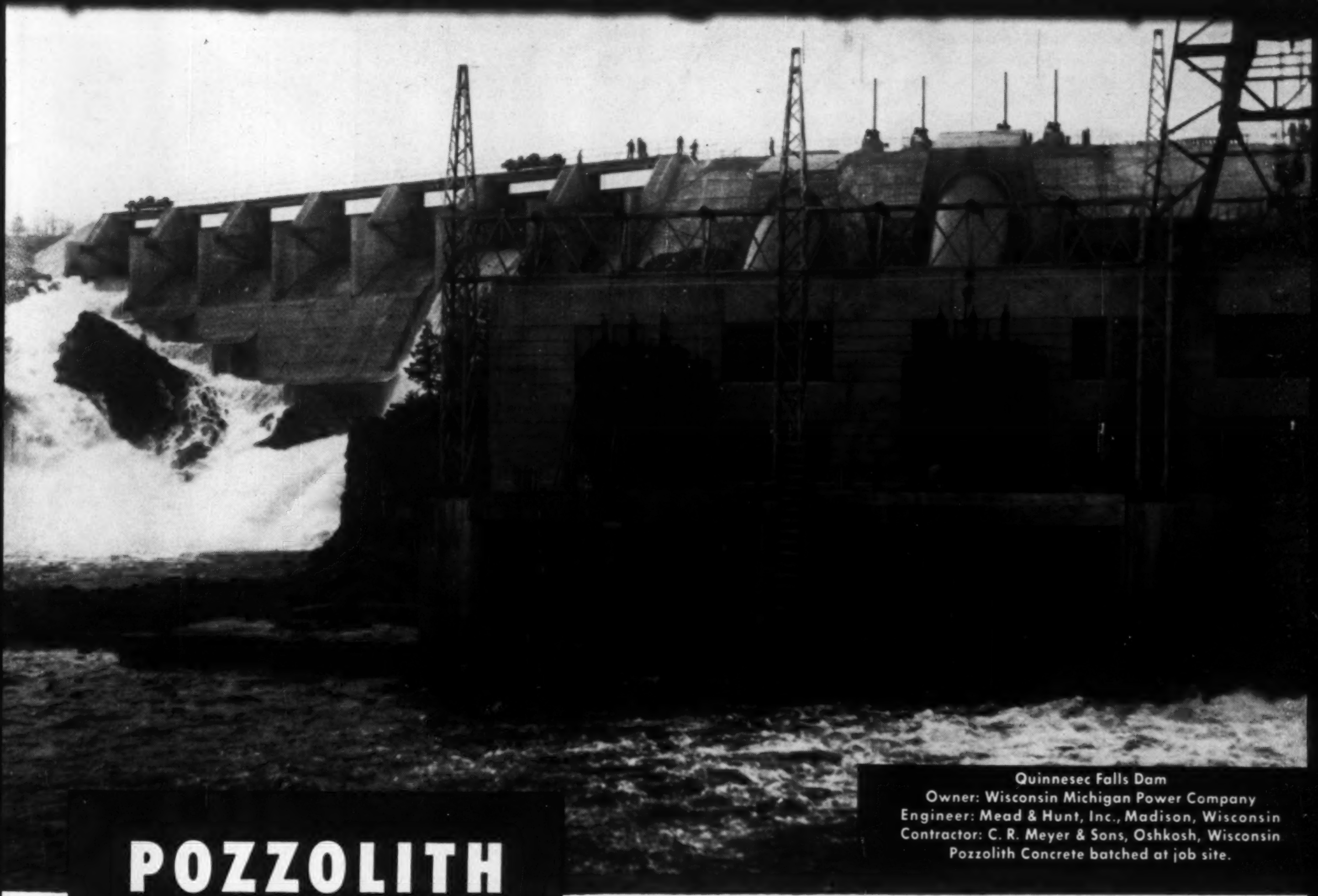
Could this be taken to mean that wellpoints could henceforth replace the former method of foundation construction in oolite—driving sheetpile cofferdams, excavating in the wet, then sealing the bottom with tremie concrete and pumping out? Such an assumption would hardly be justified since on subsequent jobs at Miami, in an oolite with high porosity, sand-filled lenses and permeable understrata, wellpoints were unable to do the dewatering alone. They had to be assisted by various combinations of sheeting, grouting, open pumping and tremie sealing. Obviously oolites vary widely in their water-bearing characteristics, and also in their dewatering requirements.

Useful additions to knowledge have nevertheless come out of these recent attempts in Florida to dewater excavations in oolitic formations with wellpoints. Key West experience indicates that wellpoints alone can dewater the oolitic limestone there—or at least at one location where they were used. Miami experience has shown that wellpoints alone generally cannot do the job there—at least under such conditions as were encountered. At the same time, some see promise in use of wellpoints with a partial tremie seal for excavation in the Miami area. And while strong expert opinion favors the standard Miami practice of using sheetpiling and tremie seal, it has also been pointed out that adding wellpoints and also weighting the tremie might sometimes effect economies over the older method.

In a broader sense the Florida experience reemphasizes that, in subsurface work, engineers who specify the method, equipment concerns who supply the tools, and contractors who put methods and tools to work must base their judgments on the best facts available—but always be prepared to meet unexpected conditions. The best engineered project may be that on which choice of method makes tools perform near their ultimate. But a fine hairline separates this ultimate from the troubles which can result when too great demands are put upon tools. It is the combined job of engineer and contractor to determine where this line should be drawn—for any set of subsurface conditions—and how closely they dare approach it with the methods and tools at their command.

Theme for Tomorrow

As a part of the year-long celebration of the centennial of Michigan State College—where the idea of public engineering education embodied in the land-grant college plan originated—the engineering school of that institution is presenting a symposium, May 12-13, on the subject of "Automation—Engineering for Tomorrow." Each department will present its own program, and that of civil engineering will be focused on "The Application of Automation to Building Design and Construction." Automation—meaning mechanization in everyday language and work-a-day dress—is unexceded in importance as a key to the continued development of efficiency and economy in all branches of civil engineering and construction. It is thus a properly challenging theme for such a forward looking occasion as the hundredth anniversary of the founding of one of the nation's earliest engineering schools.



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